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Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

UNIVERSITY
OF MICHIGAN
OCT
ENGI NG

UNDERGROUND PROJECT

General Telephone Co. of the Southwest installing 28 miles of 51-pair buried cable to take care of expanding toll business from Port Lavaca to Port Victoria, Tex. Total cost is $250,000. See page 44.

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The experience of users proves that the new North N-541 Dial outlasts any other they have used, ***and with less attention***. If your labor costs compare to the industry average you spend just about the original dial price every time you send a man to adjust or replace a dial on the job. North dials pay for themselves by "staying put" *without* repeated service calls.

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NORTH DIALS

NORTH ELECTRIC COMPANY

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FLASHES AND PLUGS

TOO TRUE. An Englishman was visiting an American friend in the United States, relates the Southwestern Bell Telephone *News* under the caption "as you may have heard."

"With all due reverence, my boy," commented the Londoner, "I think our English custom at the telephone is better than saying 'Hello' as you do here in America."

"What do you say in England?" asked the American.

"We say, 'Are you there?' Then, of course, if you are not there, there is no use in going on with the conversation."

•

TIME AND TIDE. A man in Grand Rapids telephoned a tree service firm to send someone out to cut down a large box elder in his back yard.

The call was promptly connected, the order relayed, the workmen dispatched . . . but they managed to arrive just 15 minutes after the tree crashed, damaging the roof of the house, smashing a sun porch and breaking a rear window.

•

OBSTACLE IN COMMUNICATIONS. "Pilot to control tower! Pilot to control tower! I'm coming in. Please give me landing instructions."

"Control tower to pilot: Control tower to pilot! Why are you yelling so loud?"

"Pilot to control tower: I don't have a radio!"

•

HANDLE WITH CARE. A customer told the Illinois Bell Telephone Co. recently that he wanted one of those new "Venus" telephones.

The company representative was puzzled considerably until the jokester finally explained that he meant the "no hands" type.

•

APPLE FOR TEACHER. A three-year-old girl in Oswego, N. Y., took her "Ding Dong School" lessons all too seriously.

Police and postal workers received a hurry-up call from the child's mother, who said the girl had mailed a mud pie to the television program's teacher by wrapping it in a paper towel and dropping it into a street letter box.

•

FALSE ALARM. *Public Service* magazine tells about a lady and her girl friend driving down a country road, who saw a telephone lineman scurrying up a pole some distance ahead of the car.

"Well!" said the lady indignantly, "to look at that fool you'd think I didn't know how to drive."

CIRCULATION

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Since 1901

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Democrats' criticism, of Air Force's arrangement with telephone industry to provide SAGE communications facilities indicate industry might be made a "political football." CWA authorizes committee to study relative merits of public as opposed to private ownership of telephone facilities . . . with study of all facts, private ownership will win hands down.

WASHINGTON OBSERVERS who can take their politics or let them alone may be puzzled these days over the eager beavers in both political camps who seem to be trying to rush the season on the presidential election campaign for 1956. Although it is more than a year away, political cannons to the left and right of us are volleying and thundering as if the major parties' conventions had already been held and political issues drawn.

One of the dangers of this hasty action is the possibility that phony issues can become crystallized by sheer repetition on the part of those who do not seem to have anything better to talk about during the hum-drum recesses between congressional sessions. A good example is the surprising outburst from House Majority Leader McCormack over the arrangements which the Air Force has made with telephone companies to provide communication lines for the continental air defense warning system, otherwise known as "SAGE."

These contracts had already been approved and subsequently questioned by Comptroller General Joseph Campbell. Mr. Campbell did not object to the merits of the marvelous electronic alerting system which uses so many telephone circuits. That would not be within his province anyhow. Nor did Mr. Campbell question the propriety of the arrangements, or the amounts involved, or the terms, prices, rates, or anything like that. He was solely concerned with the formality of congressional authority.

In a word, he felt that the program of such magnitude (said to involve an overall commitment of 2.4 billion dollars) should be specifically authorized by Congress rather than entered into under the general defense program authority. The Air Force pointed out that this particular program had been given wide publicity and specific explanatory testimony before congressional hearings as long ago as June 2. They asked Campbell to reconsider his position of disapproval and there is reason to believe that Campbell will do so.

As far as that went, the whole thing boiled down to a matter of fiscal protocol between Congress and the Air Force.

The Bell System said that the telephone company's sole interest in the SAGE project was to help meet the defense needs of the country. The work was undertaken at the specific request of the Department of Defense in every instance and the rates for facilities are identical with those charged other customers and are in accordance with the rate schedules supervised by state and federal regulatory bodies established for that purpose.

There has been no attempt on the part of telephone companies—nor will there be—to extend the scope of the facilities needed for SAGE. Needless to say, these companies, both Bell and Independent, stand ready, as always, to provide the Defense Department with whatever communication facilities it feels it needs for the safety of the country, and that is the extent of the industry's interest in this whole matter.

But such an explanation is too simple for those who are busy cooking up ammunition for the election campaign next year. They are tempted to jump the opening gun by firing off their own broadsides calculated to raise blood pressures and start off the political hostilities which mark our traditional quadrennial battle for the White House.

The temptations are considerable. There is the fact that the present Secretary of the Air Force was a former career official of a Bell System affiliate (although the contracts were all completed before he took his present post). There is the fact that the whole deal involved operating companies. There is the fact that 2.4 billion dollars is not hay, but on the contrary a nice mouth-filling piece of money to kick around in political arguments. There is the fact that certain parallel lines could be drawn between these arrangements and the now defunct Dixon-Yates contract —broadening the anti-utility testimony. All these things add up to a neat package, which could be fitted into the overall anti-business arguments about the great "giveaway" issue, which the extremists of one party are busy trying to inflate.

Hence, the inflammatory tone of Majority Leader McCormack's sensational charges. He likened the Air Force contracts to the Dixon-Yates "scandal." He said it's another attempt to "by-pass Congress." He said it was a "bonanza" for "big business" interests.

And, since the chore of political ammunition manufacturing seems to be widely distributed among those who are in charge of the organization of the present Congress, it was not surprising when the majority leader's outcries were answered sympathetically by a committee chairman. He is Rep. Clarence Cannon (D., Mo.), chairman of the House Appropriations Committee, who immediately began an "intensive" investigation of the contracts between the Air Force, telephone companies and Western Electric Co.

Staff members were told to have their reports ready when Congress reconvenes in January. Hearings on the controversial question are not expected before that time.

Sub-committees of the appropriations committees in both the House and the Senate already have been briefed on the new air defense warning system and the communications it will require. The communications system, which may cost the federal government as much as 240 million dollars a year, is designed to make the present manually operated radar warning system as automatic as possible. Some of the necessary installations—but not the communications system—have been approved by Congress. Work on these is going forward. Only the communications were affected by Mr. Campbell's ruling.

One of the things which the investigators will doubtless find in these arrangements is that they are not new in pattern at all. They will find that during the Roosevelt and Truman administrations the Defense Department had entered into contracts with private companies for the manufacture, installation, and operation of communication facilities. The Eisenhower administration, which was elected on a campaign platform of turning government business operations, especially of a war-born variety, back to the field of private enterprise, continued this trend. Communication services on military posts and in national and memorial parks have been and are being turned over to private companies for more effective business managed operations. To hear the partisan critics sound off, one would think that they were in favor of having the Air Force, itself, manufacture and install electronic defense equipment, secrets of which have been researched and perfected in private company laboratories.

Fortunately, for all the flurry about the contracts, the SAGE program is going ahead as it should in the interest of national security. But this controversy started by House Leader McCormack serves to remind us that business in general, and the utilities in particular, will have to look forward to prolonged sniping in the 13 months between now and the next general election.

The electric utilities have already been put on notice that the Dixon-Yates contract will never be allowed to die. The gas utilities will get theirs in the form of charges of "giveaway" with reference to the tidelands and the natural gas producer legislation still pending in Congress. Now, we see an apparent effort to put the telephone industry into this political act. One might have expected this in the 11th-hour heat of a campaign some time about a year from now. But if this kind of thing is going to keep up for over a year, it is going to get mighty tiresome.

The charges that anything secret or sinister is being slipped over on Congress, are almost comical. As the Washington *Post-Times Herald* pointed out editorially, Congress had authorized the establishment of a chain of defense installations. How could it be reasonably assumed that Congress did not also intend such authority to cover the installation and operation of a system of communications linking up these defense establishments? Otherwise they would be useless.

The Comptroller General, in a superabundance of caution, may have bent over backwards in asking that the Air Force spell out, and that Congress specifically earmark, funds for this program. But to see anything sinister in it, calls to mind an old joke about the old maid looking under the bed and hoping that she would find something.

CWA's Study Program

Telephone companies everywhere will be interested in the recent action taken by the 14-member international executive board of the CIO Communications Workers of America (CWA). Meeting in Washington, D. C., on Sept. 20, the board directed CWA President Joseph A. Beirne to set a committee to work on a study on the relative merits of "public as opposed to private ownership" of telephone facilities in the United States and Canada.

CWA claims to represent telephone operating employes in 46 of the 48 states and the District of Columbia, three Canadian provinces, and Hawaii. CWA membership is concentrated mainly in Bell System companies. The union holds contracts with only one government-owned system, Saskatchewan Government Telephones.

Here is what CWA President Beirne had to say about the board's action: "We want to get all the facts on this very important subject. What action—if any—we may take after getting the facts is left to a future executive board or convention. I personally have always favored private ownership of telephone facilities. However, I have recently returned from a world-wide meeting of the Postal Telephone and Telegraph International, a confederation of unions of workers serving communications operations throughout the free world. In all countries but ours, the communications system is government-owned and operated."

Beirne said the committee he would name would be drawn partly from within CWA, but would also contain persons outside the industry "with contributions to make" toward solution to this problem.

The text of the CWA resolution was as follows:

"For many years public ownership of telephone facilities in the United States and Canada has been the subject of much discussion and debate. CWA has always taken a position in favor of private ownership in the United States. However, CWA has never made a thorough investigation to determine all the facts.

"Now, therefore, be it resolved, that the president of CWA be, and he is hereby authorized to establish a committee to make a study of private as opposed to public ownership of telephone facilities in the United States and Canada and to report through the president to the executive board and a future CWA convention."

It is not clear just why the CIO telephone workers union feels that it is necessary to ascertain the desirability of the American plan of telephone service operation as compared with the European plan. The oft-repeated fact that the United States, with only 7 per cent of the world's population, has over half of all the telephones in the entire world ought to be pretty conclusive from the point that the American plan delivers more service to more people.

It is to be hoped that the CWA makes a *thorough* study and a broad comparison of the American plan with the European telephone plan, since CWA has decided to go into this at all. How do telephone company employe wages, for example, compare with the wages paid by government monopolies in European countries and elsewhere abroad? How about hours, working conditions, retirement benefits, fringe benefits, etc.? How about the right to belong to a union or to strike? How about the contribution made by the American telephone industry and its subscribers to the financing of the federal, state, and local governments through taxes—as compared with the largely tax-exempt, if not tax-subsidized, operations in some foreign countries? How about the quality of the service (since it is clear that as far as the saturation of service, the American companies are so far ahead of the proportionate distribution of foreign telephone systems)? How about the security of service from the standpoint of the confidential use assured the subscriber?

All of these things should make noteworthy comparisons indeed. We can look forward with interest to the end result of the CWA committee study.

Latest REA Telephone Loans Total More Than 2 Million Dollars

Four new loans made by the Rural Electrification Administration to improve and extend telephone service in rural areas of two states amounted to $2,083,000, the U. S. Department of Agriculture announced on Sept. 21. The REA financing will make it possible for telephone companies and cooperatives in these areas to provide modern dial service to a large number of farm families and other rural subscribers.

Details of the loans follow:

Dakota Cooperative Telephone Co., Irene, S. D., on Sept. 13 was allocated $787,000, second loan to this borrower.

The cooperative will use the loan funds to expand its service area into Lincoln County and into a new area in Turner County. At this time it operates in Clay, Hutchinson, McCook, Turner and Yankton counties.

As a nucleus for the expanded system, the borrower proposes to acquire certain properties from the Central Telephone Co., Lincoln, Neb. These properties, all located in South Dakota, include 394 miles of line and exchanges at Chancellor, Lennox, Parker and Worthing. The facilities furnish magneto and dial service to 1,454 subscribers.

The loan assures improved service for these subscribers and initial service for 376 farm families and other rural subscribers. The cooperative will build 113 miles of new line. Of the acquired line, it will use 315 miles, rebuild 66 miles and retire 13 miles.

Loans to the Dakota Co-op now total $1,814,000. Its plans call for a system that will include 1,144 miles of line and 12 automatic central offices serving 3,606 subscribers. Exchanges at Davis, Flyger, Hurley, Irene, Mayfield and Monroe now provide dial service to about 1,200 subscribers in those communities.

The remaining six exchanges will be located at Volin and Wakonda, plus the four new ones in the Sept. 13 loan. Service without toll charge between some of the exchanges is planned.

B. Maynard Christenson is president and Kenneth Knudsen is manager of the cooperative.

*

Burnet (Tex.) Telephone Co., Inc., on Sept. 15 was authorized to borrow $325,000, its first REA loan. The company, a new borrower, plans to use the funds to improve and extend telephone service in Burnet County. It now furnishes common battery service to 717 subscribers in and around the town of Burnet.

The borrower proposes to convert the system to automatic operation. Of the existing pole line, 51 miles will be rebuilt, 18 used in the expanded system and 27 miles retired. About 87 miles of new line will be added. With the proposed new facilities and rehabilitation, the Burnet company will be able to offer improved service to the existing subscribers and to serve 252 additional subscribers in the area now with no telephones.

The borrower, located in a county seat town, proposes to continue service without toll charge between its exchange and the nearby towns of Bertram, Lake Victor and Lampasas (rural). Loan funds will be also used to refinance existing indebtedness of the company. The completed system will consist of 156 miles of line serving 969 subscribers.

J. B. McDuff is president and manager of the Burnet company.

*

On Sept. 16, a $391,000 loan was authorized for the Colorado Valley Telephone Cooperative, Inc., LaGrange, Tex., its first REA loan, to improve and extend rural telephone service in Fayette County.

The new cooperative has no existing facilities. It proposes to acquire as a nucleus for the new system 38 miles of rural line now being operated by the Southwestern States Telephone Co., and 105 miles of subscriber-owned line in the area. These facilities are now serving 153 subscribers.

The borrower plans to retire 48 miles of the existing line, rebuild 94, and add 313 miles of new line. It also proposes to construct new automatic central offices at Ammonsville, Oldenberg and Plum.

The rehabilitation and expansion will enable the Colorado Valley cooperative to offer improved service to the existing subscribers and initial service to 625 families and other rural residents now without telephones. The completed system will consist of 407 miles of line.

Otto F. Tiedt is president of the Colorado Valley cooperative.

*

Also on Sept. 16, Hill Country Telephone Cooperative, Ingram, Tex., gained allocation of a loan of $580,000, second loan to this borrower.

The cooperative plans to use these funds to provide facilities to serve an additional 1,060 rural subscribers in Kerr and Kendall counties. It proposes to acquire the Hill Country Telephone Co. operating magneto exchanges at Center Point and Comfort. These facilities now serve 895 subscribers including 339 switchers over subscriber-owned lines.

Of the acquired 321 miles of line, 21 will be used in the expanded system and 300 miles retired. The borrower plans to construct 375 miles of new line and new automatic central office buildings at Center Point and Comfort. These changes will make it possible for the Hill Country cooperative to offer improved service to the existing subscribers and to bring initial service to 165 rural families in the area now without telephones.

With the two REA loans, totaling $1,482,000, the borrower proposes to offer modern telephone service to 2,035 rural subscribers in Edwards, Gillespie, Kendall, Kerr, Mason, Menard and Real counties. The completed system will consist of 1,033 miles of line and nine exchanges.

The Ingram, Hunt and Mountain Home exchanges are now providing dial service to about 350 subscribers. The Doss, Fredonia, Katency and Streeter areas will be cut over soon. Center Point and Comfort, in the Sept. 16 loan, are the two additional exchanges.

J. H. Duden is president and Mike M. Bennett is manager of the Hill Country cooperative.

Some Observations on Liberalized Tax Depreciation

*By C. N. OSTERGREN**

CERTAIN features of the new Internal Revenue Code of 1954 have been hailed as a great improvement. At last, some say, realistic treatment is going to be given to the taxpayer, and the Internal Revenue Service will no longer be able to squeeze depreciation allowances far below obviously reasonable claims. These cheers grew out of the so-called liberalized depreciation features of the new law.

Just one point at the outset. This paper does not advocate any point of view. It does not recommend either the adoption or the non-adoption of liberalized depreciation, nor does it favor one form of depreciation over another. It reaches no conclusions. It recognizes that every utility company has its own history, its own current problems and its own future prospects, so that no one method of dealing with depreciation can possibly be suitable for all gas and electric companies.

The writer does not wish to be a Pollyanna, saying: "Don't look a gift horse in the mouth." He believes that this particular horse should be given plenty of room; it might bite. But he does not wish to be a Cassandra, whose prophecy of the fall of Troy was consummated with the help of a wooden horse. All the author is trying to do is apply horse sense and to examine, from the standpoint of utility companies, both advantages and disadvantages of the depreciation provisions of the new tax law.

What Are the Claims Made for Liberalized Depreciation?

(1) It will lead to a more realistic treatment of depreciation for income tax purposes.

(2) It will provide capital for plant construction.

(3) It will reduce taxes, and thereby increase earnings.

Before discussing these points in relation to utility companies, let us take it for granted that some, or all, of these gains will undoubtedly be enjoyed by various companies outside the utility field. It may even work out that some utility companies will obtain substantial advantages from the new tax law; but utility companies have many problems and situations that are rare in other fields.

Realistic Depreciation

Some non-utility companies, particularly since the war, have been unable to obtain the same depreciation deductions for tax purposes as those used for book purposes. Other such companies have used the same depreciation rates for book purposes that they were allowed for tax purposes, even though the resulting depreciation accruals may have been low for both purposes.

Nevertheless, it has long been considered sound practice by much of industry to write off machinery and other depreciable assets rapidly, particularly in times when earnings are good. This, for much industrial equipment at least, is considered to be realistic depreciation.

The Internal Revenue people have generally favored slower write-offs for tax purposes, particularly since 1934. It is only natural to feel that the change in the law which permits a narrowing of the gap between book and tax depreciation is a more realistic depreciation treatment.

In the case of many utility companies the situation may well be the reverse. Very likely many of them, at least at times during the past, have used higher depreciation for tax purposes than for book purposes. In recent years, these amounts have tended to come together and it may be that most of the utility industry are now using the same depreciation rates for tax as for book purposes.

Unless higher depreciation rates for both purposes would be appropriate (and this might be the case in some utilities as well as in some non-utility companies) the use of liberalized depreciation within the utility field would hardly be characterized as a realistic treatment.

At this point, however, it is well to emphasize that there is no indication in the tax law or in the reports of the congressional committees, which wrote the law, that it was intended for some industries but not for others. It is quite clear that any company that wishes to, may take full advantage of the liberalized depreciation provisions. This is, of course, true regardless of whether to do so would be more or less realistic than what the companies are doing now.

Capital for Plant Construction

Here again we find a striking difference between regulated and non-regulated industry. A non-utility company may be able to increase its earnings through tax savings, and if it wishes it can plow these increased earnings back into the business. Any tax saving which is realized will then provide capital which might not otherwise be readily available.

In a regulated utility company the matter may not be so simple. Among regulatory commission people there may be differences of opinion as to what should be done with any tax reductions that become possible under the liberalized depreciation provisions. Some commission people may feel that it was the intent of Congress that such tax reductions should be retained by a company for use in the expansion or modification of its facilities in order thereby to stimulate the economy and to raise the standard of living in this country.

Other commission people may feel that as long as the utility is permitted to earn a fair rate of return on its useful property the company will have no difficulty in raising whatever capital it needs for construction through the regular capital markets. These commission people, therefore, may consider that any tax reduction merely reduces the cost of operation and thereby de-

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*Mr. Ostergren is with the American Telephone & Telegraph Co. and he presented the address at the recent National Conference of Electric and Utility Accountants in Chicago.

creases the revenue requirements. In other words, those who hold this view feel that in the utility industry any tax reduction should immediately be passed on to consumers.

Does the New Law Reduce Taxes?

This question has been widely debated. If a company has not been able to use as high depreciation rates for tax purposes as it has used for book purposes, then that company has, in effect, prepaid taxes. If they can now increase their tax depreciation they will, in effect, get back these prepaid taxes. This will be true until such a time as their accumulated tax depreciation reserve catches up with their book depreciation reserve.

Again, if a company now has a tax depreciation reserve which is equal to, or greater than, the book depreciation reserve, and if this company adopts and uses from now on higher depreciation rates for tax purposes than for book purposes, it is not really saving taxes. It is deferring taxes.

Since not more than the cost of property can be recovered through tax depreciation, it is evident that the use of high depreciation rates for tax purposes now can only mean, either that low depreciation rates have been used in the past, or that they will be used some time in the future. In either case no tax saving (assuming constant tax rates) is possible; it is only a question of timing.

There are some points on the other side of this question, however. First, so long as a company continues to grow rapidly, the tax deferment continues. In other words, it is only when construction falls off substantially that the tax collector would catch up with such a company. Second, suppose that corporation tax rates were greatly reduced in the not too distant future. If this were to happen, instead of this being a tax deferment it might turn out to be a real tax saving.

It does not seem amiss to point out that it used to be argued that no depreciation expense occurred until plant was retired and, therefore, practically no depreciation reserve need be set up. In other words, it was argued that no deduction needed to be made from earnings until retirement actually occurred. It would seem that only by using this kind of reasoning can it be claimed that the use of higher depreciation rates for tax purposes (assuming constant tax rates) than for book purposes would automatically produce a true tax saving.

Some Questions

It should be assumed that every taxpayer will be able to use liberalized depreciation if he wishes to and that he will be able to find solutions to the problems of record-keeping and determination of tax depreciation accruals which will meet the requirements of the Internal Revenue Service. No attempt will be made here to indicate how these problems may be solved. In any event, at the time of writing this paper the new tax regulations are not available.

There are some questions that nevertheless seem to deserve much consideration:

(1) Plant records and engineering problems.
(2) Accounting problems.
(3) Tax problems.
(4) Commission and rate case problems.
(5) Financial questions.
(6) Long-range questions.

Engineering and Record Problems

The tax code requires that property acquired new after 1953 be segregated and that liberalized depreciation be limited to this property. Without further amplification it should be obvious that this will involve real difficulty, particularly in such matters as mass property accounts, situations where property is frequently reused, and situations where complex property was under construction at the end of 1953.

It is also far from clear what method of developing depreciation rates under the sum of the years-digits method for mass property will be acceptable. In addition, it is not clear that it may not be necessary to have a complete segregation of property by years of placing for all property acquired new after 1953.

Accounting Problems

The major accounting problems revolve around the question previously raised, that is, does liberalized depreciation result in tax savings or is it a tax deferment? Naturally if it is a tax saving no special accounting is required. The tax saving simply means that taxes are lower and earnings higher.

If, however, this is a tax deferment, prudence would seem to indicate that the difference between taxes paid and what they would have been on a normal basis, should be earmarked. In this view it would seem unwise to treat these dollars as unrestricted earnings.

It must be added that the accounting profession, as well as many other interested people, are divided on the question of whether this is a tax saving or tax deferment.

Of course, if the difference between normal and actual taxes is earmarked, many accounting problems could well arise in the future. For example, what, if anything, should be done if tax rates change or if important structural changes are made in the tax laws?

Tax Problems

Aside from the numerous problems that will have to be resolved regarding the interpretation of the new tax regulations and the working up of the data which may be required by the Internal Revenue Service, there are other tax problems which, in some cases, may be important. For example, it will be necessary to support service life estimates for plant acquired new since 1953 and service life estimates for the older plant.

It does not necessarily follow that the same life will be appropriate for both. The point is that either two schedules of service lives must be developed and supported or else it must be proven that one schedule applies to both the old and the new plant. Furthermore, those companies which have been using the same lives for tax, book, and rate case purposes, have been greatly helped by that fact. With the use of liberalized depreciation the companies may not be able to say that the lives which they are using have also been found acceptable by commissions.

Another point merits careful consideration by other companies. If a company in the past over a substantial period of years has used higher depreciation rates for tax purposes than for book their tax depreciation reserve is now substantially larger than their book reserve. If their book reserves are theoretically of the right order of magnitude, then their tax depreciation reserves would be high, which may lead to a substantial lowering of depreciation rates for tax purposes on the old plant. This, of course, can happen whatever treatment is given to the new plant, but the relative importance of the tax depreciation reserves associated with the old plant will rapidly increase if there is segregation of the old plant and its reserves.

Commission and Rate Problems

It is in this field that all utility companies need to consider the problems carefully. Let us just mention a few.

If a company adopts liberalized depreciation for tax purposes, it may feel that it is essential to treat the differences between actual and normalized taxes as a deferred liability, which must be accrued for currently in the accounts before coming to net earnings. The commission may follow the same procedure for rate purposes, but if the commission at any time feels that the difference between actual and normal-

(Please turn to page 37)

THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

TROUBLE OPERATORS in a telephone exchange have their troubles. If you don't think so, read the following, sent to me by a good friend in Texas:

"May I help you sir?"

"Ach, ja! Ich ben Heinrich Schnibble, und das dingle connection mit mein uppencaller ist stoppen der dinglen."

"Das dingle connection mit—Oh, you mean the bell on your telephone doesn't dinger-ring?"

"Ja. Ich ben sitten mit waiten. Ist das dingle ben ringen? Nein!"

"But maybe nobody called you."

"Himmel, ja! Hans Obermeyer ist callen mitout failen. Hans ist callen sooner mit slooshen der milkentookers in der mornen."

"I see. Then you—sir, would you say that again about der slooshentookers?"

"Der milkentookers ben cow uphookers mit-out-pumpen der milk. After der slooshen und washen—"

"I get it! Hans usually calls you every morning after he washes the milking machines?"

"Ja, mitout failen."

"But he didn't call you this morning?"

"Nein."

"Well, have you tried to call anyone?"

"Ja, Ich ben callen Hans mitout getten der answer. Meinself ist callen und callen."

"Well, Mr. Schnibble, we'll check on it, of course, but I suspect something may have kept your friend from calling. Maybe he's sick."

"Himmel! Mit getten sickisch, Hans ist callen mit wanten der helpen!"

"But he didn't call, so-er-then, of course, he couldn't call if the telephone really doesn't ring, could he?"

"Ach, du lieber! Hans ben sickisch mit der fever uppen-gerisen und—"

"Just a minute, Mr. Schnibble. Take it easy! We don't know for sure he's sickisch. I only ben said—"

"Hans ist needed der doctor mit der stickendermic needler und also—"

"But, surely somebody ist—or rather, somebody ben around to help him?"

"Ach, nein! Hans ben expecten meinself ist bringen der doctor, und Ich ben failen mit das schtunken dingle kaput!"

"Now don't get excited, sir! What's your number? We'll just call und see if das dingle ben—"

"Dumkopf! Ist meinself ben insiden house mit hearen das dingle?"

"Ach, nein! I just ben thought—I mean, I can tell if das dingle ist—"

"Donderhead!"

"Who's a donderhead? I can so tell whether das dingle—Ach, Mr. Schnibble! Already meinself ist hearen der ringlen, mitout even callen!"

"Nein, nein, nein! Insiden mein poorisch head! And if it's Hans callen, Ich ben screamen!"—Dave Morrah.

Well! Mr. Schnibble certainly had that trouble operator confused. Could you blame her? He even had her speaking his language. I'll bet she got his trouble cleared eventually.

Repair clerk, trouble operator, or whatever her title may be, the operator who handles a customer's complaints or criticisms has an important job. It is her responsibility to obtain sufficient information as to the nature of the trouble to enable the plant department to locate it as readily as possible. This is not always an easy task, but thank goodness, there are not many "Heinrich Schnibbles." If the operator interrogates the customer in the proper manner, she can usually obtain the desired information without much difficulty.

Questions should be asked tactfully to avoid irritating a customer who already may be in an unhappy frame of mind because his telephone is not working satisfactorily. The operator should permit the customer to give his report without interruption, if possible, and then obtain any additional information that may be desired by tactful questioning.

Prompt clearance of trouble is important, too, and persistent cases of trouble should be called to the chief operator's attention. This is also true of switchboard trouble, particularly defective cords, which handicap the operator in rendering satisfactory telephone service.

Traffic Questions

(1) If an international operator reaches the outward operator and requests her to collect a deposit, how should the outward operator proceed?

(2) How should an outward operator announce a call to an international operator?

(3) If a customer requests a rate or makes any other inquiry concerning international service, what should the outward operator say?

(4) When an inward operator answers a signal and an international operator says for example, "This is the international operator. Order (no.) but do not ring. Let me know if it is busy," how should the inward operator proceed?

(5) When you are holding a number for the international operator and a ringing control key is not provided, if the called telephone answers or you receive a recall signal from the called telephone before you are asked to ring the number, what should you say to the customer?

Answers are presented on page 41.

Devereaux of NW Bell Named S.D. Manager

Richard A. Devereaux of Minneapolis, has been appointed South Dakota general manager for Northwestern Bell Telephone Co. A. F. Jacobson, Northwestern Bell president, said the appointment is effective Oct. 1.

Mr. Devereaux has been Bell commercial manager for Minnesota since October, 1953.

NEW DEVELOPMENTS

in Independent Telephony

By RAY BLAIN

THIS IS the second article in a series of three, in which the technical editor of TELEPHONY describes various new items of equipment which should be of interest to all progressive Independent telephone companies. The first article appeared in the Sept. 24 issue.

The Trafficorder. Informed managers of telephone operating companies know that efficient operation requires precise, up-to-date information about traffic conditions in the exchange. Only from such information can assurance be had that the number of trunks or switches in each part of the exchange is neither inadequate nor excessive.

Peg-count and overflow meters, while they contribute useful information, are not able to measure the actual traffic in an exchange. Peg-count meters measure only the number of times a switch or trunk is used, without regard to the length of time it is held; while overflow meters indicate only the number of times all trunks in a group are busy, without showing the length of time this condition endures. The only way the actual traffic in a group of trunks can be measured is by periodic observations to determine the number of busy trunks. Such observations taken at short intervals can be integrated to show the actual traffic in the group. These observations are called switch counts.

In the past, switch counts have been taken manually. A group of observers is posted within sight of the group of switches to be surveyed. A supervisor signals the counting (scanning) intervals, usually about a minute. On signal, each observer scans the group of switches assigned to him, and records the number found busy. At the end of the survey period, usually one hour, the results obtained by the individual observers are totaled and the traffic is obtained by calculation.

This manual process has several inherent shortcomings. The number of people required is usually more than is conveniently available. Count accuracy suffers because of the monotony of the job. The accuracy of the results obtained depends partly on the speed with which a group is scanned, partly on the number of times it is scanned within the survey period, and partly on the regularity with which the scanning interval is observed. Speed, high number of scans, and regularity are all difficult to obtain when the survey is made manually.

To overcome these shortcomings, there has been made available the Trafficorder, a machine by means of which counts can be made frequently and with a degree of accuracy much higher than can be obtained by manual switch counts.

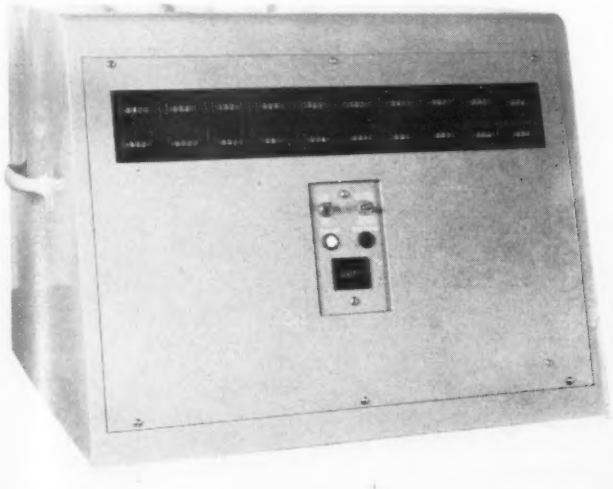
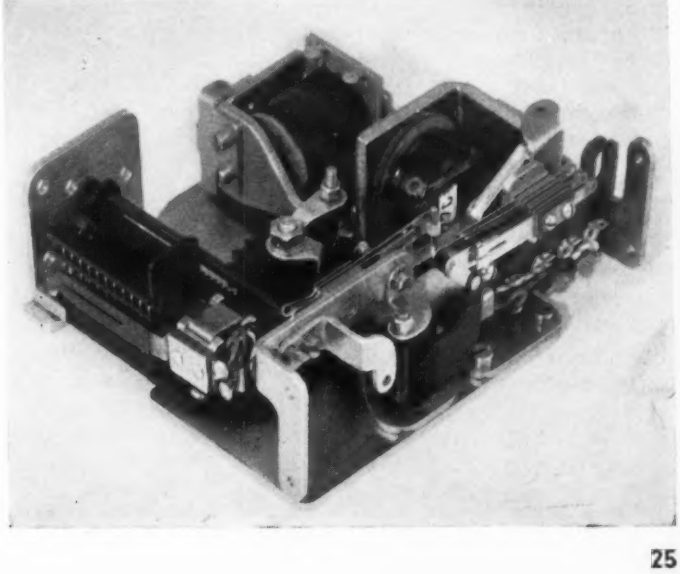


Fig. 6. The Trafficorder.

Fig. 7. New 10-point switch.



The machine is contained in a compact metal cabinet about 22 inches x 16 inches x 17 inches. It is portable (about 100 pounds); handles are provided for convenience in moving it.

As many as 20 groups of trunks can be surveyed simultaneously. The maximum number of trunks per group is 25. (If a trunk group is larger than 25, it may be split and distributed over two or more groups on the Trafficorder. The counts for the Trafficorder groups are then totaled to obtain the count for the entire trunk group.

Twenty-one counters are mounted on the front face of the machines. One counter is associated with each group, and records the count. The 21st counter records the number of scans completed.

Connection to the switches or trunks to be surveyed is made by a single conductor for each to a screw terminal on the back of the machine. Connection of sources of 48 volt dc and 115 volt ac, 60 c/s. is also required.

The proper connections having been made, the machine is ready for operation. Before starting, the surveyor records the reading of each counter. The machine is then set in operation by throwing the ON switch. Two positions of this switch are provided—ONE HOUR, and CONTINUOUS. In the CONTINUOUS position, the machine will operate continuously until shut off manually. This position is used for making surveys for special purposes. However, surveys are usually made over periods of exactly one hour (the busy hour). In the ONE HOUR position of the switch, the machine will run for exactly one hour and then shut itself off. This feature permits the machine to be left completely unattended, once started.

While operating, the machine scans each trunk group every 10 seconds. While it would be possible to improve the accuracy slightly by using a shorter scanning interval, the improvement would be very small. Moreover, the 10-second interval has the important advantage that the counters read directly in tenths of unit calls (CCS/10). This means that readings from the counters can be used directly to enter traffic tables, without further calculation.

At the end of the survey period, the counters are read a second time. The initial readings are then subtracted from the final readings to give traffic figures in tenths of unit calls. With this information, and knowing the number of switches or trunks in each group, the surveyor can determine the grade of service from taffic tables.

Many operating companies have found that this machine quickly pays for itself by permitting the most economical use of available switches and trunks. Records from the machine, free as they are from human bias and error, have been found invaluable in dealing with regulatory commissions on rate matters and grade-of-service complaints.

This machine is shown in *Fig. 6.*

Ten-Point Switch. A new 10 point, four-level switch, utilizing many of the parts and features of the 100 point switch used in X-Y dial systems, is now available. It has been proved that practically no wear occurs on case-hardened, parco-lubrite finished parts used on the 100 point switch. Similar parts on the new switch also are case-hardened and have the oil retaining parco-lubrite finish for long life. The stepping magnet on the new switch is also practically the same with the exception that it has been possible to increase coil resistance, eliminating any need of external spark protection.

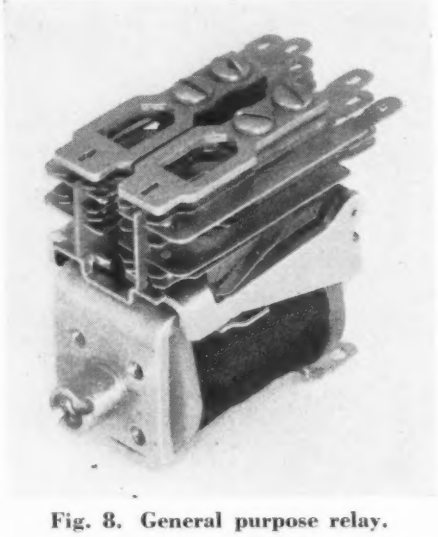


Fig. 8. General purpose relay.

One of the features of the X-Y system is the wire bank and wiper method of contact. This wiper-wire bank contact has been built into the new switch with the additional feature that the wire banks may be removed to facilitate soldering connecting wires to them. The wire bank and four wipers are where the fourth wire was obtained for the X-Y dial system. It is also available to obtain the fourth level on the new switch.

Another feature of the new switch is the fact that it is locked in the home position until the stepping magnet operates. The purpose of this is twofold. As the switch is released by operating a release magnet, the switch returns home and is locked, preventing a rebound to the first stepping point and giving a false circuit operation. It also prevents excessive bounce of the off-normal contacts, reducing wear of the contacts.

The switch is compact in size measuring 4¾ inches long, 4 inches wide and 1½ inches high. (See *Fig. 7)*

General Purpose Relay. This is a new industrial general purpose relay. Compact in design, it measures approximately $1\frac{5}{16}$ inches wide, 2 inches long, and $1\frac{11}{16}$ inches high with its maximum spring pile-up. It can readily operate six "C" (break-make) combinations mounted in twin stacks of three each but can be obtained with "A" (make), "B" (break), or "D" (make before break) combinations in place of "C" combinations. For special circuit requirements, it can also be obtained with "XA" (preliminary make) combinations which operate before the rest of the pile-up.

This relay has been subjected to shocks of 50 G's without mechanical failure and, when operated, will remain operated under shocks of 20 G's or vibrations ranging from 10 to 55 cycles per second.

Long life can be expected from this relay through its extra-long precision bearing and strong prosphor-bronze armature hinge pin. Coils cannot become loose on the core since the nylon coil forms are molded directly on the core. Delay sleeves can also be molded into coil forms for slow operate and release characteristics. Residual screws can be furnished when required but the present design uses a core and armature plated with non-magnetic chromium to eliminate the residual screw. Unusual is the fact that no pre-forming of springs is required. All pile-up springs are straight. Contact variations are made up by using ground insulations of various thicknesses in the pile-up. Twin precious metal dome contacts cannot become loose on springs since they are permanently welded directly to the spring.

Economical and trouble-free service can be expected from this light weight (less than 3½ ounces with maximum spring pile-up) relay. Many circuit requirements can be met with the various coils, including coils for operation on 110 volts. (See *Fig. 8)*

Switchboard Cords. Field and laboratory tests indicate that this new cord will give extremely long life. The cord utilizes the nylon outer braid which has given long life on previous cords. In addition, a vinyl plastic cover is used on the conductor for better electrical resistance along with a nylon supported tinsel for higher tensile strength.

Terminal Strip Protector. During the process of running jumpers on the main distributing frame, there exists the danger of excess solder or small pieces of wire falling on terminal strips mounted below. Simple but effective is the new guard for horizontally mounted

terminal strips. Made of a flat piece of black laminated phenolic, it is available in four rectangular sizes to properly cover various height terminal strips. It is connected to the fanning strip by two flexible spiral rings so that it can readily be tipped back out of the way when working on the terminal strip it protects. (See *Fig. 9*).

Bar Type Handset Switch. In this new bar type handset switch the switch itself features twin palladium capped crossbar contacts that operate no matter where the plunger bar is pressed. One make, one break or one transfer combination are available as standard. Other arrangements can be offered for special purposes.

This switch, mounted in the new short handset has found many telephone applications such as a "transmitter cut off" for noisy locations or a "battery saver" push-to-talk switch for local battery sets.

Industrial applications have been varied, including such services as remote station dictating telephones with the bar type switch serving to control the dictating recorder, and as a push-to-talk switch to control two-way radio systems.

In line with the present trend toward color in everything about us, the bar type switch and handset will soon be available in all of the standard colors. (See *Fig. 10*).

Private Branch Exchange (Dial). This PBX system, providing for part-time attendant services, is so constructed that it could be placed in any convenient location within the regular office area.

The principal part of this system is a soundproofed cabinet 50 inches wide, 2 feet deep and 6 feet 4 inches high, containing both the dial switching equipment and the complete power supply. Doors front and back completely enclose the unit.

The cabinet is equipped with casters, can easily be rolled anywhere by one man. This cabinet uses less than 9 square feet, rides in passenger elevators, and rolls through standard doorways. Hold-down stops within the cabinet prevent unauthorized movement. The attendant's turret approximates a standard typewriter in size. The turret operation is reduced to basic simplicity, freeing the attendant for other duties.

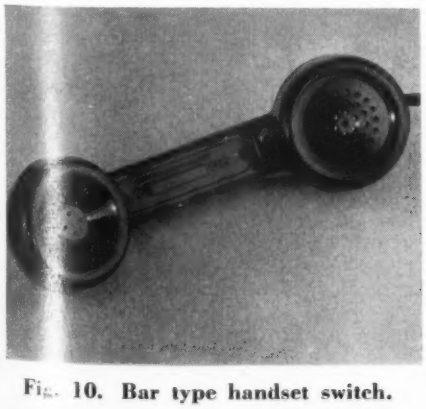


Fig. 10. Bar type handset switch.

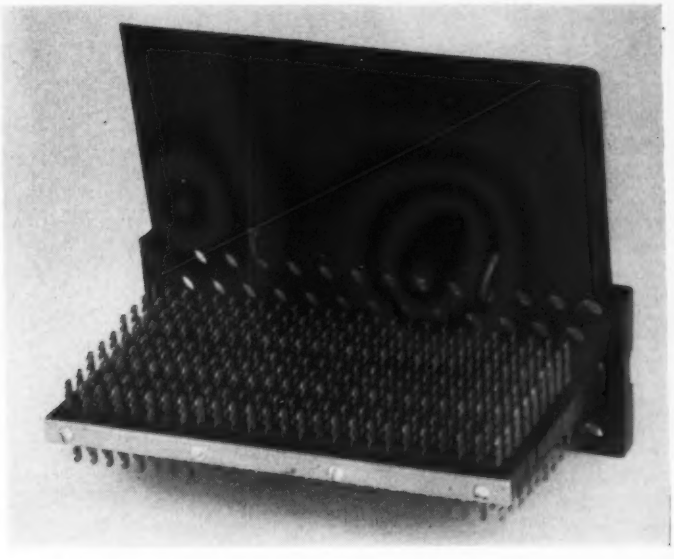


Fig. 9. Terminal strip protector.

The capacity of the system is 40 single-party (private) stations; eight combination trunks (incoming and outgoing) and two information trunks. Twelve fully private conversations may be in progress simultaneously, up to eight of them trunk-connected. Certain stations, if desired, may be restricted to inside calls. Any attempt to place an outside call from one of these stations will result in a busy signal.

Dial telephone service between local stations is always available. Telephones which are trunk-connected for night service are temporarily removed from access by dialing within the local system. Any trunk line can be connected to pre-determined stations for completing incoming and outgoing office calls at night or during other periods when the turret is unattended.

The switchboard provides mounting space for code call equipment if it is desired to add this feature. A person not at his desk may be summoned by chime signals to pick up the call at the nearest telephone.

An emergency battery provides incoming and outgoing service to the central office through night service stations and the attendant's telephone for the duration of a temporary failure in ac power. (See *Fig. 11*).

Tripod Ground Rod Driver. The tripod ground rod driver provides a simple and inexpensive means of installing Copperweld sectional ground rods when a power-operated hammer is used for the driving operation. The tripod supports the weight of the hammer through a block and tackle which also affords a means of raising and lowering it. Although light in weight, the tripod has adequate strength and the telescoping legs provide for easy handling and transportation. Sectional rods can be driven deep into the ground to reach the better conducting soils in less time and with less effort with power-operated drivers than by any of the usual hand driving methods.

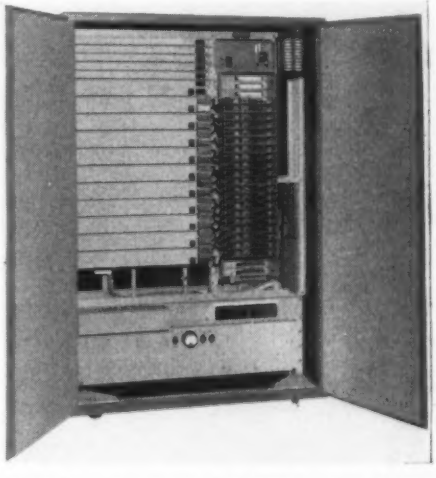


Fig. 11. View of dial PBX with doors open to show circuit plates, switches, terminals and power equipment.

When gasoline or air hammers are used for driving sectional ground rods, some method for raising or lowering the hammer and also for supporting its weight on top of the rod is desirable. Usually the weight of the hammer required for effective driving is such that it is difficult for a man working from a pole or a ladder to operate the hammer while supporting its weight on the top of the rod.

Various methods have been devised for this purpose such as suspending the hammer from a block and tackle attached to the cross-arm or a portable mast arm clamped to the pole. How-

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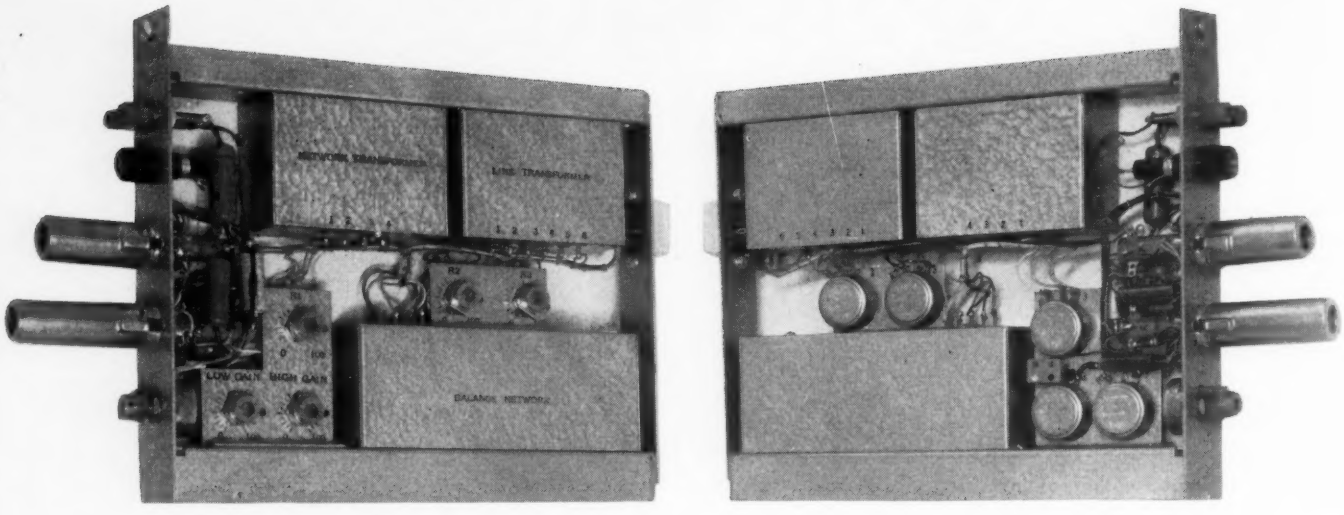

Views of both sides of a negative resistance repeater are shown here. This equipment features potentiometer controls for adjusting the gain of the amplifier. It also is of plug-in construction and can be quickly removed from the rack for servicing.—Photo courtesy, Kellogg Switchboard & Supply Co.

Voice Frequency Repeaters

Copyright 1933 by Telephony Publishing Corp.

By HAROLD B. McKAY

PART 4—*Negative Impedance*

BEFORE ATTEMPTING to get a concept of negative impedance repeaters, we would do well to review our understanding of "regular" impedance and the other factors involved in electrical circuits. Any electrical circuit involves voltage, current and resistance. The voltage is the pressure or electro-motive force; the current is the rate of flow.

The word "resistance" in its electrical sense might be thought of as "passive resistance"—a piece of wire, an electric lamp, a heating element, each has resistance to the flow of electric current. But, this resistance is not a force which exists within the resistance material. In other words, the resistance wire itself does not actively oppose the flow of electricity with a force of its own.

What happens in a resistance is that a voltage drop occurs across it when current flows in it, and only when current flows in it. This voltage drop

Reprints Will Be Available

This is the fourth of a series of nine articles—six on "Voice Frequency" Repeaters" and three on "Power Supplies for Repeaters and Carriers."

The author, Mr. McKay, will be remembered for his three series of popular articles on "Principles of Microwave Operation"; "Electrical Principles Used in Carrier Systems"; and "Corrosion of Underground Cables" and other articles published in TELEPHONY.

These repeater articles will be invaluable as employe training material and if firm orders are received for a sufficient number of reprints (in booklet form) to justify reprinting, they will be available following publication of the nine articles.

Telephone companies desiring reprints are asked to enter their reprint orders during publication of the articles. Prices of the booklet form of reprint are as follows:

1- 100 copies	each	$.85
101- 200 copies	each	.80
201- 300 copies	each	.75
301- 400 copies	each	.70
401- 500 copies	each	.65
501-1,000 copies	each	.60
Over 1,000 copies	each	.50

opposes, or subtracts from, the voltage we started with and is wasted in the resistance. On a telephone line, the alternating speech voltage starts out at full power at the transmitter, but the resistance of the line causes this voltage to drop off along the way until we may not have enough left to operate a receiver at the end of the line.

Reactance

Other things besides resistances oppose the flow of current and cause voltage to drop. Coils and condensers will do this to alternating currents. However, it is not the resistance of the wire that retards the alternating current in a coil. It is the "choking effect of one turn of wire "reacting" against the other turns that reduces the current flow. Because of these effects, a coil is often called a "retard coil" or "choke coil." The effect of the winding is called "reactance" instead of resistance.

Reactance is measured in ohms just like resistance. There are two kinds of reactance; in a coil we have *inductive reactance* and in a condenser we have a *capacitive reactance*. Because their effects are opposite, one is always subtracted from the other when both are present in a circuit.

It must also be remembered that reactance, while it is measured in ohms, does not exist on dc circuits for practical purposes here. Further, the reactance of a coil or condenser changes as the frequency of the ac changes. The inductive reactance becomes higher (more ohms) as the frequency rises; the capacitive reactance lowers (less ohms) as the frequency rises and vice versa.

Some electrical circuits may have both reactance and resistance connected together. Indeed, any ordinary coil has this. It may have a few ohms of resistance in the copper wire, and several hundred ohms of reactance at 1,000 cycles ac. A repeat coil is an example of this. It may measure 20 ohms with a dc ohmmeter, but *react* as 600 ohms at voice frequencies.

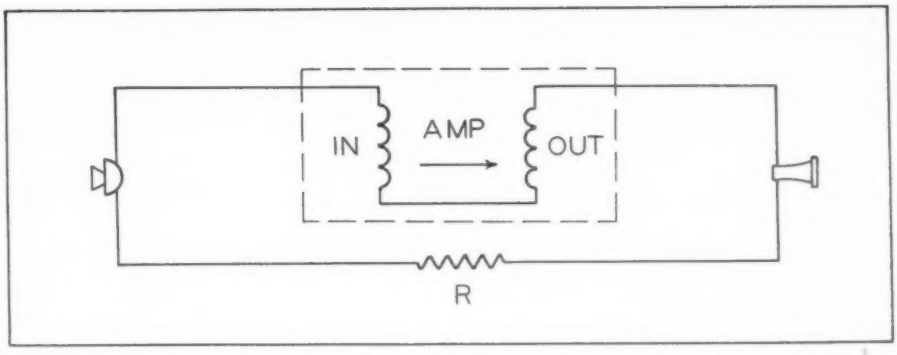

Fig. 4.1. If the output coil of the amplifier is connected in a manner which will place its polarity in series aiding with the voltage generated by the transmitter, it will increase the power to the receiver. An amplifier so connected will behave as though it had negative resistance, and will in effect subtract from the resistance, R of the telephone line. This is series negative resistance, because the telephone line is intact through the amplifier, as all units are in series. (Drawings in this article are by Victor Willard.)

When both reactance and resistance exist in a circuit, the combined ohmage of the two is called impedance. Some telephone men make a simple definition and say that impedance is ac resistance. While not technically correct, it is a practical definition for our purposes. Actually, many use the two words interchangeably, and the negative impedance repeater is also called a negative resistance repeater.

"Negative Resistance"

The word negative as applied here refers to the mathematical negative rather than the electrical "minus" sign. It is part of the engineer's jargon and represents a new approach (to workmen at least) to thinking out complicated devices.

In the mathematical sense a negative object or substance does just the opposite to what a positive object would do. For example, in color photography, there is a piece of green glass that can be placed over the camera lens for the purpose of eliminating red light. This is called a "minus red" filter. The fact that the color is green is of no importance and is not mentioned. It is used as a negative red device, and that is what it is called.

Similarly, we can have a negative resistance. Actually, this is a purely theoretical concept. There is no such thing as a negative resistance, unless it is a battery or generator. Study the following logic, remembering that a negative thing is the opposite of a positive one:

(a) A regular resistance (positive) drops or loses voltage; therefore, a negative resistance must raise or deliver voltage.

(b) A regular resistance takes in electricity and gives off another form of energy (heat); therefore, a negative resistance must take in another form of energy and give off electricity.

(c) A regular resistance retards the flow of current; therefore, a negative resistance must boost the flow of current.

(d) In a regular resistance, current flows in a direction determined by the polarity of the voltage. In a negative resistance the current flows in a direction opposite to the voltage.

All of this adds up to the definition of a battery. In the simple telegraph circuit shown in *Fig. 1.1a* in Part I (Sept. 10 issue), adding to the battery voltage would offset the effect of the line resistance. In other words, more battery would be the equivalent of placing negative resistance in the circuit. The negative resistance would subtract from the positive resistance, making less total resistance in the circuit.

In an alternating current circuit, as was explained in an earlier chapter, the resistance may be offset by increased voltage; but the increased voltage must rise and fall and change frequency exactly in step with the

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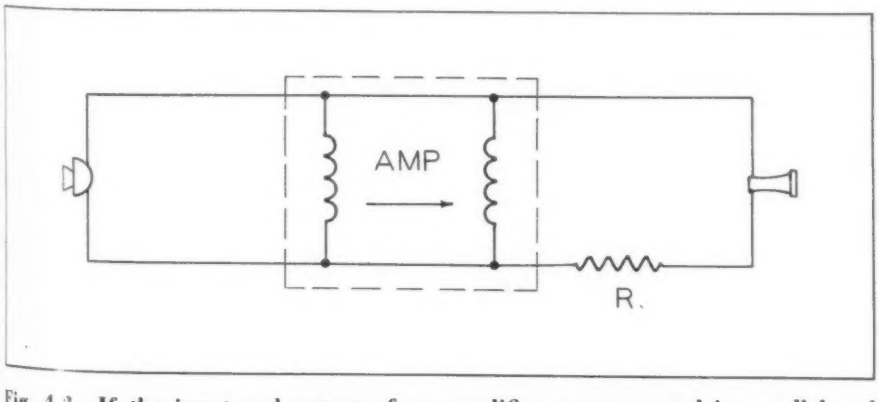

Fig. 4.2. If the input and output of an amplifier are connected in parallel and connected across a telephone line the effect will be that of shunt negative resistance. Actually, the amplifier will boost the voice received from the transmitter and send it on to the receiver. In so doing, it subtracts from the effect of the line resistance R, is therefore equivalent to negative resistance.

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AUTOMATIC ELECTRIC

ORIGINATORS OF THE AUTOMATIC DIAL TELEPHONE

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITOR

THERE IS MUCH speculation among telephone engineers these days on the advisability of maintaining exchange cable under constant gas pressure. Perhaps the principal objection to this method has been the difficulty in making an old cable gastight.

This task has been made considerably easier of late by the development of a new leak detector. This is a liquid that is sprayed on the cable by a device carried on a cable car arrangement which is pulled along the messenger strand.

Pressure is then placed on the cable, and all sheath openings, from the largest to the smallest, show up as bubbles or foam. These openings may then be located and repaired so that the cable may be maintained under pressure. Wax dams or plugs are also placed in the tails of all cable terminals.

There are certainly many good arguments in favor of this type of cable maintenance. If something hits the cable and causes an opening in the lead sheath, it may not be detected until the first rain, and then a number of telephones may be cut off from service. The prevention of service interruptions is becoming increasingly important as telephone systems grow larger and traffic heavier.

Questions are frequently raised as to the difficulties that may be experienced with the maintenance of pressurized cable and the training that may be required to qualify splicers in the maintenance of the pressurized system.

We doubt that this warrants serious consideration since the cable system may be sectionalized and when the pressure drops on a particular section, a contactor will close and an identifying alarm will be given at the central office. The trouble will then be cleared in the normal manner and the pressure restored on this section of cable.

Remember, also, that in the majority of cases this will all happen prior to any interruption of service.

•

The trend toward color in telephone sets in this country is increasing at a tremendous rate. It is rumored that the production schedule of one large manufacturer for next year calls for only about 40 per cent of the total output to be black telephones. There is a probability, too, that colored set production may exceed 60 per cent of the factory's output.

Some operating companies estimate that they remove 15 telephones to gain one instrument in service. Moreover, it is said that a total of 14 of the 15 telephones removed will be black.

If the production of colored sets is not increased, and the manufacture of black sets is continued at the normal rate, then there will soon be a surplus of black sets.

It is too bad that no one has ever developed a satisfactory method of painting telephone sets.

•

An engineer friend of the writer ordered an extension telephone installed in his home which was served by the Bell System. This friend wanted the wiring concealed and expected that the installer would object to this method, and would prefer the easier way of running wire along a baseboard, over a door and either up a stairway or through the ceiling.

By the help of a Bell System Practice on inside wiring he happened to have, he figured out how the job could be done by fishing the wire beside an air duct, and left the Practice with his wife to hand to the installer in the event he objected to the concealed job.

Sure enough, the young installer objected and had a good story as to why it should be done the easy way. The housewife then showed him the Bell System Practice and explained how her husband preferred the job done. The installer then carried out the concealed job without complaint even to the satisfaction of our engineer friend. We imagine that the young installer is still wondering how it all happened.

In our opinion, it is a pity that all homes do not have conduits in all locations where a telephone possibly may be installed. When this is not done, then an all-out effort should be made to conceal wiring, whenever it is possible.

•

The writer recently had the pleasure of inspecting a new revolving aerial ladder mounted on a 1½-ton truck. This truck should appeal to, and prove a good investment for, many operating telephone companies. The ladder we examined had a ground to platform length of 30½ feet. The ladder is perfectly counter-balanced which eliminates the dead weight and permits one man to raise it with a minimum of effort.

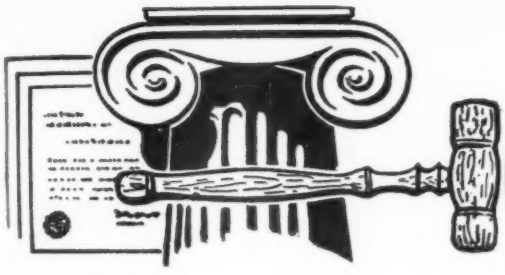
The upper section of the ladder is extended to the desired length by means of a hand wheel and windlass. Hooks fall automatically into place to hold the upper section in extended position. The ladder is lowered by gravity.

The ladder may be rotated a full 360 degrees. The angle of elevation is controlled by a hand wheel provided on either side of the ladder base. Safety devices are provided throughout and this rig should prove a real time and labor saver for any telephone company.

•

We have heard that lightning trouble is noticeably less on plastic-insulated cable than on paper-insulated cable.

If any of our readers have had experience in this connection, will you please send us a report?



Courts and Commissions

Alabama Commission Approves Three Sales

Alabama Public Service Commission has approved the following three sales:

Foster-Bell Telephone Co., Union Springs, to the Union Springs Telephone Co., Inc.

Certain abandoned toll line facilities of Southern Bell Telephone & Telegraph Co., located between Silverhill and Robertsdale, to Gulf Telephone Co., Foley.

C. W. Tomlin, doing business as Ariton Telephone Co., to Claude J. Dodson.

Ariton Telephone Co. also secured approval of the following rates:

One-party business	$5.00
Two-party business	4.50
Four-party business	4.00
Eight-party business, rural	3.25
One-party residence	3.25
Two-party residence	2.75
Four-party residence	2.25
Eight-party residence, rural	2.25

New York Company Files $4,000,000 Issue with SEC

Rochester (N. Y.) Telephone Corp. has registered its proposed 195,312-share common stockholder subscription offer with the Securities & Exchange Commission. On the basis of recent prices, this amount of stock has a market value of about 4 million dollars, it was reported on Sept. 15.

It is expected that shareholders of record Oct. 6 will get rights to subscribe on a one-for-four-held basis. First Boston Corp. and associates will take up any unsubscribed shares following the close of the offering period on Oct. 24.

Proceeds will be used to repay 3 million dollars in bank indebtedness previously incurred for construction, and for future construction. The company expects to spend an additional $8,370,000 for this purpose next year.

FCC Recommends Sale to Bell

A Federal Communications Commission examiner has recommended approval of the sale of the McHenry County Telephone Co., Marengo, Ill., to Illinois Bell Telephone Co., it was reported on Sept. 16 (TELEPHONY, July 23, p. 33). The recommendation is to become final in 40 days unless objection is filed.

C&P of West Virginia Raises Rates Under Bond

About 264,000 subscribers of the Chesapeake & Potomac Telephone Co. of West Virginia started paying increased rates effective Sept. 19, but the full amount of the increase may not remain in effect very long (TELEPHONY, May 21, p. 37).

The West Virginia Public Service Commission still must decide whether it will allow all, part or none of the rate increases, which were requested by the Chesapeake and Potomac company.

In the event the commission decides against raising all or part of the rates, the affected customers will be entitled to refunds which carry 6 per cent interest. Before being permitted to put the rates into effect, the company had to file a $500,000 bond for the possible refunds.

C. H. Johnson, company vice president, said the new rates, which were filed with the commission last Apr. 22, are needed to "keep telephone growth and expansion abreast of the industrial progress of the state and to provide the high quality of service demanded by the people."

The higher charges are intended to add about 2.7 million dollars to the company's annual revenue. Taxes will cut the amount to about $1,241,000 for the net income figure.

Mr. Johnson said the company "made every effort to set the amount of rate relief at the minimum necessary to do the job." He stressed that in order to keep pace with the state's progress, Chesapeake & Potomac "must become and remain financially strong."

Rate Cases in Wisconsin

The Wisconsin Public Service Commission was scheduled to hear the application of the Central State Telephone Co., Junction City, for authority to increase rates, on Sept. 22. Also, on that date, the application of the Thorp Telephone Co. for a rate increase.

State Not Liable During Anti-Strike Operation

An opinion handed down by the Missouri Supreme Court held that an agent of the state is not liable for damage claims against a public utility during a period of state operation under the state's utility anti-strike law.

Acting in a case involving a claim against the Kansas City Public Service Co., the court ruled there was no merit to the company's contention it was not liable for claims arising during state operation.

The high state court ordered a judgment of the Cole County Circuit Court dismissing the firm as a defendant, reversed and remanded, but sustained the ruling of the trial court dismissing action against the state.

The utility was taken over by the state in 1950 and Vance Julian, then chairman of the Missouri Board of Mediation, was placed in charge to prevent a work stoppage on the transit lines.

The suit was brought by Charline Rider, a bus passenger, who contended she sustained injuries during the period of state operation due to the negligence of a bus operator.

Written by Judge C. F. Strockman, the court's opinion declared that, under the facts, the state did not incur any liability to persons injured as the result of seizure of the property and that there was no evidence that the employer-employe relationship regarding company personnel was severed when state seizure became effective.

The opinion was expected to affect a large number of damage suits filed during state operation of the company.

N. C. Independent Seeks Permission for Rate Raise

The North Carolina Telelephone Co. Matthews, on Sept. 14 asked the North Carolina Utilities Commission for permission to increase rates for its Wadesboro and Morven exchanges, which it will convert to automatic on Dec. 18.

At the same time, the company asked

that rates at its proposed Ansonville exchange be made the same as those for the Wadesboro and Morven exchanges. The company reported it is negotiating with United Telephone Co. of the Carolinas, Southern Pines, to take over the Ansonville area, and plans to install an automatic exchange there.

The North Carolina company, formed last winter by Linn D. Garibaldi of Charlotte from the Matthews & Waxhaw Telephone Co. and the Anson Telephone Co. (TELEPHONY, Jan. 1, p. 34) told the commission it hopes to buy United Telephone's lines, rights and related assets in the Ansonville area, and estimated that the new Ansonville exchange would go into operation next Apr. 1. The company said it also has arranged to buy the Wingate Telephone Co. from Frank R. Ritchie.

The commission was told that the company is now making improvements and installing automatic equipment at Morven and Wadesboro, with "heavy outside plant construction" 85 per cent complete.

Under its plans, the company told the commission toll-free extended area service will be offered between the Morven, Wadesboro and Ansonville exchanges, and that it also will work out arrangements for toll-free connections with the Lilesville Telephone Co.

The proposed Ansonville exchange would serve a section now without adequate telephone service, and the Burnsville area which now has no service.

If the company's proposed rate schedule is approved, the gross income would be increased from $53,760 to $113,076 a year at Wadesboro; from $5,478 to $12,600 at Morven, and the Ansonville exchange would yield about $10,896.

Proposed new rates for the three exchanges would be: Business—$9.00 for one-party service, $6.50 for two-party; $5.50 for four-party and $5.50 for rural, multi-party. Residence — $6.00 for one-party service, $5.00 for two-party, $4.50 for four-party, and $4.00 for rural, multi-party.

Now grossing $54,760 a year, the Wadesboro exchange rates now are: Business—$4.50 for one-party service, $3.25 for two-party, $3.00 for rural, multi-party. The residence rates are $3.00, $2.00 and $1.00.

The Morven exchange now grosses $5,487 and its present rates are: Business—$3.50 for one-party service, $3.00 for two-party, $2.50 for four-party and $3.00 for rural, multi-party. Residence —$2.25 for one-party service, $2.00 for two-party and $2.00 for rural, multi-party.

Second Company Forms in Texas City After Protest

A contract has been let for the construction of a second telephone system in Garden City, Tex., by the Glasscock County Telephone Co. Cooperative, Inc., with 90 subscribers signed up, a spokesman has announced.

The new cooperative has purchased a building in which to establish an exchange, and surveys have been made to determine the locations of poles and other equipment. Initially, the new system will have operators. A contract has been made with the Southwestern Bell Telephone Co., it was also reported, for long distance service. Those who have signed up for the service live in all parts of the county. The capital stock issue is for $12,000, substantially all of which has been subscribed. It is expected the new system will be in operation by early fall.

Also in operation in Garden City is the new automatic system of the Garden City Telephone Co., owned by Jerry Coomer of McCamey. It is operated through an automatic exchange. Residents say they think it has about 20 subscribers. Long distance service also is available through this system, but anyone wishing to make a long distance call must use one of the private telephones in a home or place of business. There isn't a paystation at the unattended exchange or elsewhere in Garden City.

Plans for forming the new co-op got underway early in the year, when most subscribers to Garden City Telephone Co. service had their telephones removed as a protest against what they described as "excessive long distance charges" and "inadequate service."

Three SW Bell Exchanges Sold to Kansas Company

Sale of three Southwestern Bell Telephone Co. exchanges at Isabel, Nashville and Sawyer to Haviland Telephone Co., owned by Howard Ellis, has been approved by the Kansas Corporation Commission, it was reported on Sept. 4 (TELEPHONY, July 9, p. 42).

This clears the way for a $300,000 modernization program which Mr. Ellis will undertake at the plants.

Ellis plans to start actual construction by Jan. 1. Cost of the project will be met from a Rural Electrification Administration loan and from sale of some stock to subscribers and to other investors, according to the report.

OK Bell Sale in Kansas

Haviland Telephone Co. has purchased the Isabel, Nashville and Sawyer exchanges from the Southwestern Bell Telephone Co., it was reported on Sept. 4. (TELEPHONY, July 9, p. 42). Conversion of the three to automatic operation is planned by the Haviland Company.

Present Diamond State Rates Receive Approval

Present rates of the Diamond State Telephone Co. were approved on Sept. 16 by the Delaware Public Service Commission (TELEPHONY, Sept. 17, p. 39).

Finding that the company's net income is reasonable, the commission approved a company motion that the rate case be terminated. Recent capital expenditures to improve and expand its equipment had been cited by the company.

The commission's approval of present rates closed out proceedings which began in June, 1953, with the request for increased rates by the company. The commission granted about one-third of the increase requested by the company, a decision that was appealed to the Delaware Superior Court. The court set the rates which are now in effect.

These rates were, in turn, appealed by the commission to the Delaware Supreme Court which ruled that the superior court should not have set the rates, but that the commission should have given more weight to other elements in the company's petition in the original commission decision.

Indiana Commission Approves Sale of Notes and Stock

The Monon Telephone Co. recently was authorized by the Indiana Public Service Commission to issue and sell $76,000 worth of first mortgage 5 per cent notes, and to issue 1,000 shares of no-par value common stock.

The company's petition explained that the $76,000 would be used to pay indebtedness and short-term bank loans, and to partially reimburse the company for money spent for improvements and extensions.

N. D. Commission Announces Decisions on Three Cases

Three decisions on telephone cases have been announced by the North Dakota Public Service Commission.

The commission granted Mrs. E. B. Ringham authority to sell the Almont Telephone Co. to Ernest Vanilla.

In an accompanying order, the commission authorized a rate increase for the exchange, which serves some 73

rural subscribers and 29 business and residence subscribers in the village of Almont.

In a third order, the commission authorized the Dakota Central Rural Telephone Cooperative Assoc., Carrington, to buy the property of the Farmers Fairview Telephone Co., which serves 14 rural subscribers in the Woodworth vicinity.

Neb. Company Allowed Raise, Extended Area Service

Authority was granted the Nebraska Central Telephone Co., Gibbon, on Sept. 2 by the Nebraska Railway Commission, to establish non-optional, two-way extended service between its Ansley exchange and the Mason City exchange of the Northwestern Bell Telephone Co., effective with the conversion of either exchange to automatic operation.

Effective the same date, the order also discontinues the present optional extended service rates from Ansley to Mason City, and increases the rates for business service at Ansley from $6.00 to $7.00 for one-party service, and from $5.00 to $6.00 for two-party service.

In a previous order on June 17, the commission granted permission to the Northwestern Bell company to establish non-optional extended service from Mason City to Ansley, effective with the conversion of the Mason City exchange to automatic operation.

Approve 3.85% Return For Alabama Independent

A schedule of increased rates for the Florala Telephone Co. was authorized on Sept. 15 by the Alabama Public Service Commission (TELEPHONY, Sept. 17, p. 40).

The Florala company calculated its rate of return on 1954 operations as 2.68 per cent. Approved rates are estimated to produce an operating return of 3.85 per cent, the commission order stated.

North Carolina Company Acquires Independent

The North Carolina Telephone Co., Matthews, was authorized by the North Carolina Utilities Commission on Sept. 21 to acquire the Wingate Telephone Co. (TELEPHONY, Sept. 17, p. 40).

It also was authorized to pay the amount by issuing 14,286 shares of North Carolina Telephone's common stock to Frank R. Ritchie, Wingate's owner and also North Carolina's general manager.

Oregon Company Authorized To Incorporate, Borrow

The Oregon Public Utilities Commissioner on Sept. 15 ordered that G. E. and Dorothy Baker, doing business as the Rose Valley Telephone Co., Scappoose, a partnership, transfer their assets to the Rose Valley Telephone Co., a corporation. The transfer is in exchange for 2,365 shares each of common capital stock, par value $25 per share, to Mr. Baker and Mrs. Baker.

In a separate order issued the same day, the company was also directed to issue to Minnie E. Short 160 shares of common capital stock, and to Daryl Baker 80 shares of common capital stock. The corporation was authorized to borrow from Pacific Mutual Life Insurance Co., of California, $125,000 for use in paying existing debt and to improve, modernize and add to its telephone plant. The corporation is to issue its promissory notes for the indebtedness, with interest payable at the rate of 5 per cent per year for 20 years.

Missouri Company Stock Sale To Finance Conversion

Negotiations were completed recently by which the Dempsey-Tegler brokerage house of St. Louis would take over sales of the preferred stock of the Cassville (Mo.) Rural Telephone Co., Inc., it was reported on Sept. 8.

Officials of the company hope to be able to complete sale of the preferred stock soon and conclude negotiations for further financing to cover expense of installing a system in Cassville and Exeter and to enlarge the scope of its rural service.

All details for the purchase of the Forest Service telephone lines serving the Barry County portion of the Mark Twain National Forest by the Cassville county have been completed, and the title is now vested with the company, it was reported on Sept. 7.

Kansas Commission Hears Pleas to Sell, Raise Rates

Berryton Telephone Co.'s application to transfer its assets and service territory south of Topeka to Southwestern Bell Telephone Co. was to have been heard by Kansas Corporation Commission on Sept. 19 (TELEPHONY, Sept. 3, p. 40).

The commission was to hear an application from Bell to take over the territory on the same day.

The commission last spring ordered the Berryton company to improve its service. The company said it could not afford to do so.

On the same date, the commission was to hear the application of the Centralia Telephone Co. for authority to raise rates $3,232. The company serves 420 subscribers.

Illinois Company Asks Rate Raise for Exchange

The Illinois Central Telephone Co., Clinton, has filed with the Illinois Commerce Commission a proposed change in its rates for the new automatic system in Maroa, it was reported on Sept. 9.

R. C. Ross, general manager of the telephone company, said that 80 per cent of subscribers in Maroa had expressed approval of the new rates.

The automatic system is expected to go into operation about Nov. 14.

Los Angeles Judge Sentences Paystation Culprit

An actor in Los Angeles made a telephone call on Aug. 7 by placing a copper slug in a paystation coin slot, police charged on Sept. 8.

Municipal Judge Parks Stillwell advised the offender that saving a dime would cost him $75. He was also placed on two years' probation.

Set Up Group Insurance Coverage in Washington

A Washington Independent Telephone Association Trust became effective on Sept. 1, which in addition to hospitalization and medical care, provides group life insurance coverage.

The Washington association pronounced the group life insurance feature a most important part of the plan because in many instances it offers financial assistance when greatly needed.

Gets $5,000 Rate Increase

The Sullivan County Telephone Co., Forksville, has Pennsylvania Public Utility Commission approval to boost rates an estimated $5,000 a year, effective Oct. 1.

The company serves 305 subscribers.

Asks OK for Stock Issue

The New York Public Service Commission was scheduled to hear on Sept. 22 the petition of Candor Telephone Co. for authority to issue stock and a mortgage.

construction and maintenance DIGEST

- **Insure your power**
- **Quick work on cable**
- **Profitable noise**
- **Lightweight champ**
- **New small insulator**

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by C. J. Reynolds, Stromberg-Carlson Company

The few dollars you spend on *reliable* equipment today will be repaid a hundredfold in lower maintenance costs for years to come. Protect your investment with the double guarantee offered by Stromberg-Carlson. First, leading manufacturers build this equipment, and guarantee it. Second, because we recommend and sell this equipment to the telephone industry, we *also* guarantee its performance!

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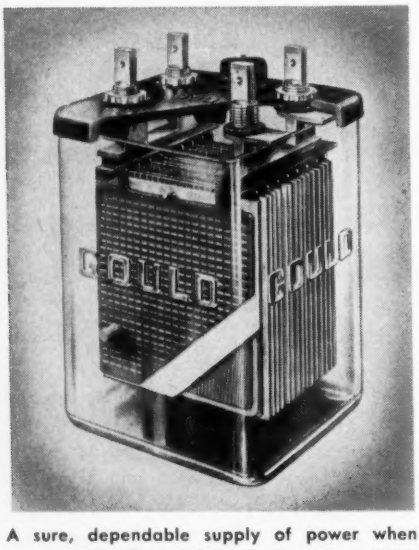
Because Planté batteries practically last forever... providing standby power that never fails... they're the best operating insurance you can buy. In switchgear, signal and alarm systems, or emergency light and power applications, these lead batteries have rolled up amazing performance records . . . are famous for their ability to deliver a powerful surge or a steady flow of current the instant it's needed. Make sure you're in operation . . . always. Choose Gould Planté.



A sure, dependable supply of power when you need it. That, briefly, is the story of this Gould Planté battery.

New Time Saver Terminal

When stringing plastic cable, the loop-through PLX Cable Terminal is the one to use.

The Cook PLX Cable Terminal for plastic cable.

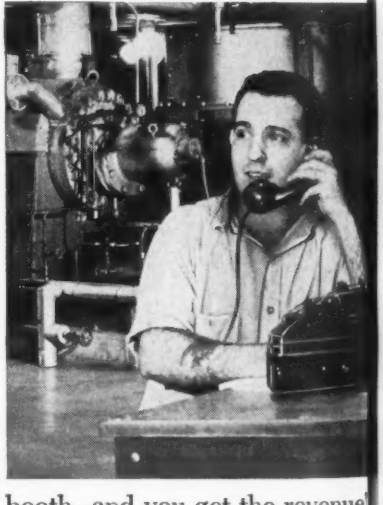
It's the easiest to install, most economical terminal made. No stubbing—the cable is looped in and out. No splicing—the cable is continuous right through the terminal. No potting—just put a Neoprene grommet in place and secure. These features mean time saved, and time saved is dollars in your pocket.

Made with a heavy galv steel frame and cable chamber Cook Electric Company, it utili the famous XB Bakelite facepl

Noise can be money!

Take a business subscriber w has a telephone in some extrem noisy location—and who has fin decided to do something about Would you rather have him spe money in building a soundproo booth—or give **you** the money monthly income on a telepho which completely licks the no problem?

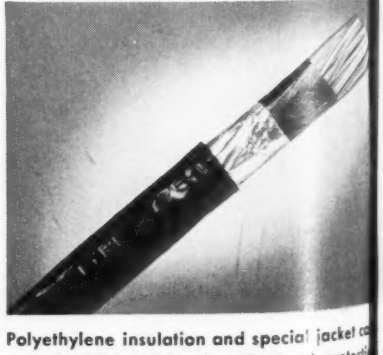
The GAI-PHONE is such an inst ment. It has a special transmit that actually creates a "Zone Quiet" around the handset—even a spot as noisy as a boiler facto It costs the subscriber less tha



booth—and you get the revenue!

Here's easy-handling cable— Aerial, burial or tucked in a duc

You can cut installation a handling costs, save yourself a of time, with Ankoseal lightweig plastic cable.



Polyethylene insulation and special jacket co pound of this cable give plenty of protecti

It has polyethylene insulation that gives you excellent moisture resistance and thereby eliminates the hazard of wet cable. Another advantage of polyethylene is its high dielectric strength, which means less lightning trouble.

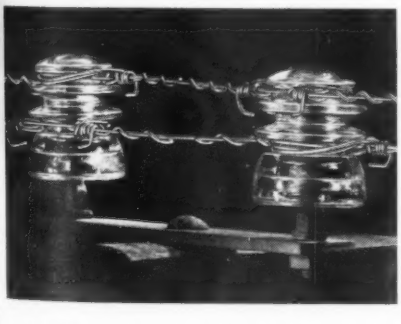
And to give you an unbeatable protection from weather, the Ankoseal 454 jacket compound is used. This special formula not only shrugs off climatic conditions, but also resists corrosion, electrolysis and vibration cracking.

Ankoseal lightweight plastic cable is made for aerial (both messenger and self-supported), for duct and for direct burial installations.

Smaller, lighter insulator for point transposition

Here's the answer to your demand for a small, light insulator for point transposition.

Weighing almost 25% less than its predecessor, the Hemingray Number 56 insulator has several important advantages. It's grooved just right to hold wire firmly. It's small and easy to install. Requires no special hardware, and goes on standard pins.



You'll get years of reliable service from each Hemingray insulator, because they are unaffected by sudden or seasonal temperature changes, do not age or deteriorate. All surfaces are, of course, impervious to moisture.

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SOME OBSERVATIONS ON DEPRECIATION

Concluded from page 23

ized taxes is a tax saving, and not a deferment, the company's rates may be reduced, and it will then find itself in the untenable position of accruing currently in the accounts for a deferred liability, even though the service rates do not provide the dollars for it.

If a commission recognizes that this is a tax deferment and permits the company to earn enough money to keep up a deferred tax reserve, the company's new capital requirements would be reduced. If, in addition, the commission did not deduct this tax reserve when arriving at a rate base and did not lower the rate of return, there would also be an increment in earnings.

There is, of course, this to be remembered. Despite the stand the commission takes now, no commission can be indefinitely bound. In the event that a company is now allowed to build up a deferred tax reserve and if it grows to substantial proportions, this reserve could become a problem. The pressures under which the commissions operate, particularly during hard times, might well lead in some cases to the requirement that the reserve be drawn down in order to improve the reported earnings.

Financial Questions

The major financial question is: Does liberalized depreciation provide a source of capital, thus lowering the amounts of new capital that must be raised through ordinary channels? This question is important to all utility companies, and more so to any that may have difficulty in raising all the capital they need. In various cases, therefore, liberalized depreciation despite its difficulties and even dangers may well be worth invoking, but it will of course provide capital only under favorable regulation, such as already explained.

Any company which does decide to make use of this provision and which also sets up a reserve for deferred taxes would do well to consider what kind of capital this really is. Perhaps it can be best described as a debt to the federal government, the due date of which is not known, and with a face value at maturity which is not known. It is a debt with a zero rate of interest.

Under this view it probably would be looked upon as a capital which takes the place of other forms of debt. In a company with a low debt ratio it might instead hold down the amount of equity capital required, but in a company where the debt ratio was already high enough it could with safety take the place only of other debt.

Long-Term Problems

There may be many of these. The record keeping alone, for the various segregations that may be required merely for tax purposes, can become more and more difficult as time goes on.

Tax laws and tax rates will change. No one can tell in what direction. If tax rates go down, liberalized depreciation now might be advantageous. If they go up, its use now might be detrimental in the long run.

The tax law may easily be changed by a Congress not sympathetic toward industry, including utilities. Congress may be influenced by taxpayers who will contend that the present law discriminates against them.

Regulatory commissions have changes in personnel. State laws change. No one knows what kind of problems might arise here.

California Company Names G. W. Snyder District Head

Citizens Utilities Co., Redding, Cal., announces the appointment of George W. Snyder as district manager at Alturas. In this capacity, Mr. Snyder will be in charge of the Citizens Utilities Co. exchanges at Alturas, Canby, Adin, Bieber, Fort Bidwell, Cedarville, Eagleville, Lake City and Likely, as well as exchanges at Burney Montgomery Creek and Fall River Mills.

Mr. Snyder was formerly with the General Telephone Co. of Illinois. He has had over 15 years experience in all phases of the telephone business and served in the United States Army Signal Corps during World War II in the Pacific theater.

Bell Solar Battery to Be Placed in Service

The Bell solar battery will be placed in service in an experiment near Americus, Ga., on Oct. 4 to furnish electrical power to a rural telephone line. This will be the first time the sun's energy has ever been used in such a manner.

This development (TELEPHONY, July 23, p. 31) is a part of the Bell System's continuing research to help bring more and better telephone service to rural areas. The solar battery will feed power to a new rural telephone system using transistors instead of vacuum tubes.

The experiments are being conducted jointly by the Bell Telephone Laboratories and Southern Bell Telephone & Telegraph Co.

USITA Booklet Tells How to Get Most from National Ads

"You Can Get More From Your National Advertising" is the title of a 24-page booklet now offered by the United States Independent Telephone Association. Its theme is: "How to get more local attention and greater local results—through tie-in advetrising."

In the section, "National advertising —for local results," are explanations of: The target—ideas and action; what people are saying about the USITA advertising; cultivating "grow" money, and a look at the new horizon.

"Local advertising—for greater results," tells what tie-in advertising is, and how to use tie-in material and where to buy it. The section also sums up the fully coordinated and semi-coordinated tie-in programs.

Tools and methods of the tie-in advertisirg program include newspaper mats, bill enclosures and reprints of the national ads appearing in *Time, U. S. News & World Report* and *Farm Journal.*

The inside front and back covers carry a statement by Leon F. Roberts, USITA's director of information on the new Independent telephone industry emblem. He says:

"Recently, a proud new trade-mark joined the ranks of thousands you see and recognize every day. It is yours. It represents your company and your great industry. It is the new insignia of America's Independent telephone companies, adopted by the United States Independent Telephone Association and introduced in your behalf befor an audience of millions.

"From its very first appearance in national advertisements of the USITA, on through the months and years ahead, it will become better and better known.

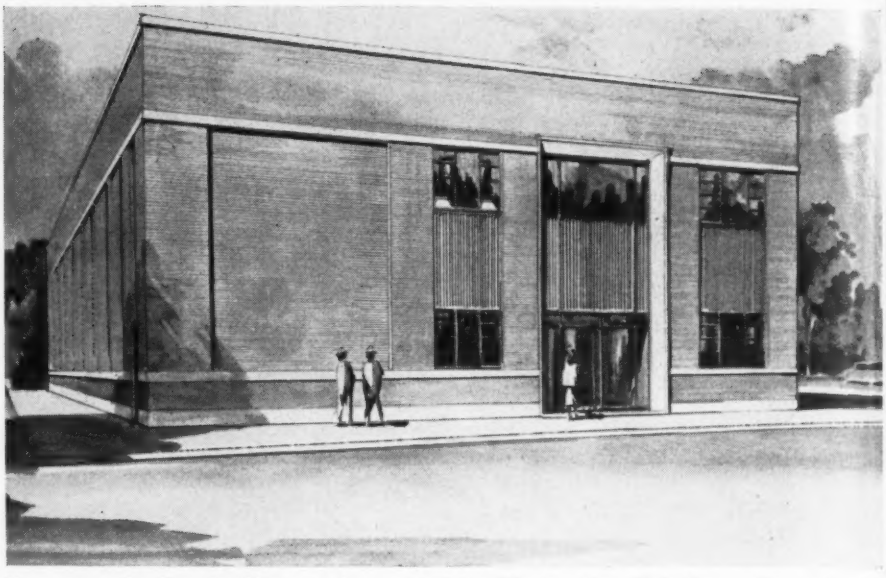
"This will mean a lot to you, if you put the emblem to work locally—in your advertising and printed matter, on telephone booths, buildings, signs and vehicles, on letterheads and telephone directories—in every way you can.

"For with the growing familiarity of millions of Americans behind it, the new emblem will focus powerful attention on your company—as part of the nation's vast and vital Independent telephone industry.

"This new emblem is a major step forward in our campaign for greater nationwide recognition of Independent telephone companies everywhere. It's for you. You have everything to gain from its use by your company—so join with us in making it a success!"

Structure of Capitalism

"Prosperity and economic progress are built by individuals and by aggregates of individuals (corporations), working with superior tools and power technology, which are the fruits of science and invention, financed by the thrift of individuals. Politics constitutes social overhead, and is not the dispenser of material well-being."—M. S. RUKEYSER, *columnist.*



New central office building to be erected by Elyria (O.) Telephone Co. to house new automatic equipment and toll facilities. The conversion to automatic will take place in the fall of 1956 and is the final step in a 5 million dollar expansion program in Elyria. The new equipment will consist of 5,000 lines with 12,000 terminals and a 26-position toll board, which is being so engineered that direct distance dialing may be inaugurated.

North Carolina Companies Raked by Hurricane Ione

Telephone communications in eastern North Carolina were badly hit by Hurricane Ione on Sept. 18-19, with the Carolina Telephone & Telegraph Co. of Tarboro, suffering most from the storm.

The company reported that 27 of its exchanges were completely cut off, with 8,000 stations out of order and 200 toll circuits knocked out. Morehead City and New Bern were the hardest hit among the exchanges, with much of the damage resulting from water in cables as well as lines down. The company had its toll circuits repaired and in working order by the night of Sept. 20 with local troubles expected to be corrected by the end of that week.

E. M. Friar, general plant manager, said exchanges isolated by the hurricane include those at Topsail Island, Holly Ridge, Swansboro, Richlands, Morehead City, Beaufort, Marshallberg, Atlantic, Newport, Oriental, Bayboro, Pollocksville, Trenton, Vanceboro, Aurora, Bath, Belhaven, Swan Quarter, Englehard, Jacksonville, Newton Grove, Garland, Williamston, Plymouth, Columbia, Robersonville and Gatesville.

Pre-hurricane arrangements had emergency power generators ready to supply telephone electricity needs and many of the isolated exchanges had local service despite power failures and severed long distance facilities. Additional crews from telephone companies that were not in the path of the hurricane helped restore service in the storm areas.

Norfolk & Carolina Telephone Co., Elizabeth City, which serves the extreme northeast section of North Carolina, reported only "very minor damage," and had all circuits working by the morning of Sept. 20.

Southern Bell Telephone & Telegraph Co. reported 3,000 to 4,000 stations out of order and 203 toll circuits out, with all lines cleared by the night of Sept. 20.

Which Kind of America?

"To what extent do the American people wish to be compelled to invest in certain industries, whose losses they pay and whose profits if any, accrue to the state apparatus? Or do they prefer to make their own investments? The profits of private investment invariably flow back into society, after the state has taken its cut."—DOROTHY THOMPSON, *columnist.*

Search for Truth

The love of truth is the stimulus to all noble conversation. This is the root of all the charities. The tree which springs from it may have a thousand branches, but they will all bear a golden and generous fruitage. — ORVILLE DEWEY.

NEW DEVELOPMENTS

Continued from page 27

ever, with these, the installation of the rod is limited to the immediate vicinity of the pole whereas, in some instances, it may be desirable or necessary to install rods at locations where a means for supporting the hammer may not be available. The portable tripod ground rod driver can be set up at any desired location where rods must be driven.

The legs of the tripod are made of high strength aluminum alloy and these are hinged at the apex to a welded steep cap. The legs are made in three sections and are of the telescoping type. In the closed position, the over-all length of the tripod is approximately 6¾ feet. When the three sections are extended and spread to support the hammer the over-all height of the tripod is such that it can be used for driving 8-foot sectional

Fig. 12. Tripod ground rod driver.

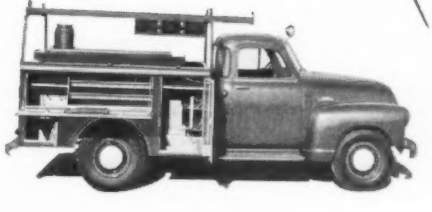
Copperweld ground rods with a gasoline hammer. With only two sections extended, the tripod may be used for driving 5-foot rods. The weight of the tripod is approximately 40 pounds which permits easy handling and transportation.

When installing Copperweld sectional rods with the tripod ground rod driver, the method for setting up the tripod over the spot where the rod is to be driven is relatively simple. The legs should be spread out radially and laid flat on the ground with the cap at the apex centered over the desired location. The legs should then be extended three or two sections depending on whether 8-foot or 5-foot rods are to be driven.

After attaching the block and tackle

POWERS American

CABLE SPLICERS' WORKSHOP



Here's a cable splicers' body that's always ready for work—routine or emergency. It's the compact Series 44-CS-90 Body . . . designed for action . . . equipped to carry everything needed on any job. Here's a 90″ workshop that's a cable splicer's dream come true. Why not put it to work in your operation?

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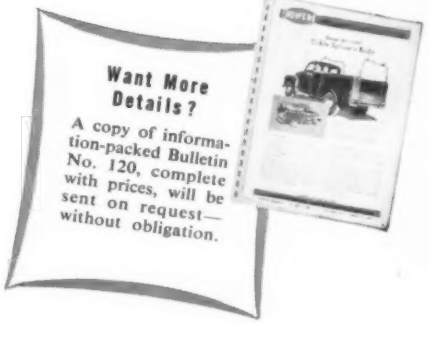
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to the eye bolt at the bottom of the cap, the tripod is raised, keeping the cap centered over the point where the rod is to be driven. A ground rod may be used for raising the tripod to the desired elevation. Minor adjustments may then be made if required to seat the points of the legs firmly in the ground or to compensate for any unevenness of the ground.

When the tripod has been set up, the hammer is attached to the block and tackle and raised to the proper height to accommodate the rod. With a coupling and driving stud screwed on the top end, the rod is then inserted in the driving chuck of the hammer with the point of the rod positioned directly below. The hammer should be lowered sufficiently so that its weight is just resting on the top end of the rod. The hammer is then started and as the rod penetrates the ground, the block and tackle is slacked off so that the full force of the hammer blows are imparted to the rod.

When the rod has been driven to the ground line, the hammer is raised and a second section of rod coupled to the first. The operation is repeated until the desired length of rod has been installed or until the resistance measurements which should be made after each section has been driven, indicate that the desired resistance has been obtained. (See *Fig. 12.*)

Fig. 13. Telephone type volt-ohm-milliammeter.

Telephone Type Volt-Ohm-Milliammeter. This instrument is specially tailored for the peculiar requirements of telephone service. The meter may be used to advantage for the following types of telephone testing:

(1) Checking oscillator activity in low ac ranges of carrier equipment.

(2) Checking low-pass and high-pass filter combinations in coupling of carrier systems superimposed on wire circuits for a transmission medium.

(3) Checking relay coils for shorted turns or continuity (or ground-to-frames).

(4) Checking values and continuity of resistors in telephone control circuits.

(5) Checking for continuity and shorts in condensers.

(6) Maintenance of ringing supply generators.

(7) Detection of weak or dead cells in central batteries.

(8) Measurement for ground, foreign battery, shorts and open circuits in trouble on the wire pairs, in cable or open wire.

An extra feature of this meter is the neck strap which supports the meter so the user will have both hands free. The carrying straps are adjusted to accommodate the neck strap. With the neck strap in use, the meter is supported in a workable position, with the dial always fully readable. In telephone work, the neck strap is invaluable when working on a pole, or ladder and where both hands are needed to handle the test leads or tools. (See *Fig. 13.*)

VOICE REPEATERS

Continued from page 29

speakers voice. This, it was shown, meant using an amplifier to raise the original voice up to the required higher voltage. An amplifier then conforms to the definition of a negative resistance or negative impedance. Therefore, on a telephone line, putting an amplifier in the circuit is like putting negative impedance in the line, because the effect of the amplifier is to counteract the line losses.

The Series Repeater

Repeaters of earlier manufacture, like the ones described in Part 3, actually terminated the line at the input of the repeater, then started off a new circuit on the line as it left the repeater. In this respect it was more the equivalent of *Fig. 1.1b* than negative resistance. Because of this, dc signals and ac ringing could not be sent through the repeater but had to be bypassed around it by relays or other means.

There are many applications, particularly on inter-office trunk circuits, which require very little dc signaling current—where a need exists to amplify the voice, but where the dc signaling range does not have to be extended. In other words, the distance might be such that there would be trouble in

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talking, but not in dialing or supervision.

Some repeaters are adapted to this situation by means of dc by-pass circuits. These consist of choke coils which are bridged around the repeater from input to output. With low resistance but with high reactance, the chokes permit dc and low frequency to pass around the repeater, but force voice frequencies to go through the amplifier.

The new look in repeaters is a device which preserves the original metallic circuit of the line so that dc may always flow through it, regardless of the repeater. Because of this method of connecting the repeater in series with the line, the coils in the repeaters become boosting devices to the line and, therefore, actually have the effect of a negative impedance.

By our previous reasoning, it was shown that an amplifier in an ac circuit could be made to appear as a negative resistance. This may be developed from the theoretical hook-up in *Fig. 4.1.* Here we have a telephone

Answers to Traffic Questions on Page 24

(1) Reach the calling telephone and party and secure the deposit of the amount as specified. When the correct amount has been deposited, say to the international operator for example, "Nine dollars OK." Then proceed as directed by the international operator. If the call is completed through your position, attach a cord clip to the toll cord as a reminder to challenge upon receipt of a disconnect signal.

(2) "Say (calling place) customer on line," report ready if necessary to the calling party, and cut out when the international operator speaks to and receives a response from the customer.

(3) Determine the rate to the specified country, or place in Mexico or Cuba, and quote the rate in the regular way.

(4) The inward operator will say, if she secures the line, "WH." She will remove the sleeve from the key, cut out, and fasten the cords together with a cord clip as a reminder to disregard the lighted trunk cord signal.

(5) Say, "Long Distance is calling. I will call again when ready," and hold the line waiting for further order.

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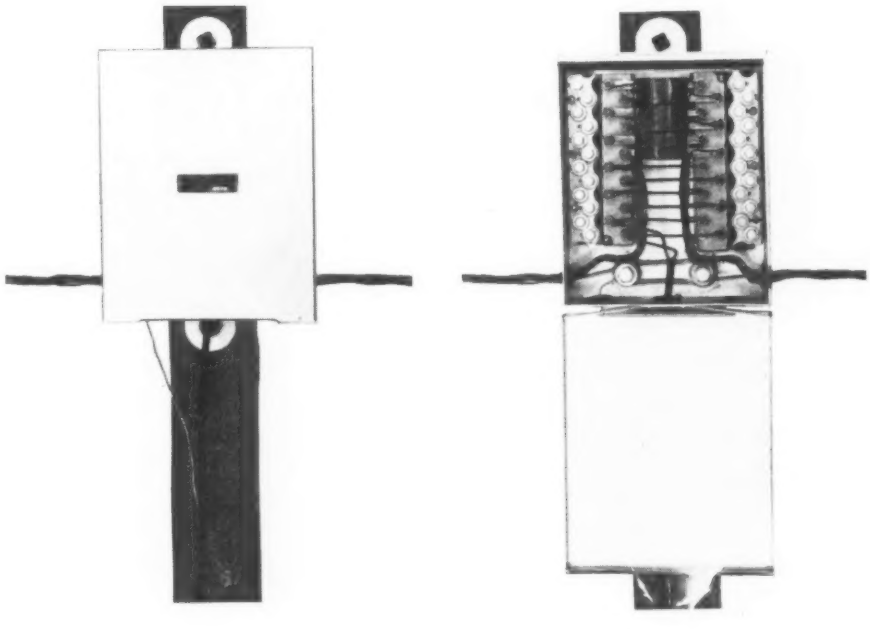

Designed to be used with the new rural distribution wire, the 177 terminal loading case is available in 8 types. Made from cast aluminum, this combination terminal box and housing for loading coils can be used protected or unprotected. The loading coils may be either 88 MH or 44 MH as required. Normally, 88 MH coils are used for the highest transmission efficiency. The loss using 88 MH coils is approximately 0.40 DB per mile. The loss using 44 MH coils is approximately 0.48 DB per mile. For further information, write us. We'll gladly answer any questions you may have.

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transmitter at one end of a line and a receiver at the other. In between is a resistance representing the line resistance and an amplifier which amplifies in the direction of the arrow. Note that the output of the amplifier is connected in series with the line.

Polarities

The plus and minus signs represent the ac voice voltage at any one instant. In studying ac circuits, it is convenient to make it "stand still" for a moment with a fixed polarity. Then the voltages can be regarded as dc and studied from this viewpoint.

The following points should be noted in *Fig. 4.1.*

The polarity emerging from the transmitter, which is the source of the original power, runs up against *like* poles at the resistance and at the amplifier input. This demonstrates the fact that the voltage drops in these two items *oppose* the applied voltage, which of course is true in any circuit. (Remember, like polarities oppose, unlike attract.)

Note that even the polarity of the receiver opposes that of the transmitter, because it, too, is part of the load. These polarities around the circuit are what would be measured if a voltmeter were applied to each part. They are caused by the voltage drop over the resistance of the part. The voltage drop, in turn, is caused by the current traveling through the part.

It has been assumed up to this point that the transmitter was the only source of power in the circuit. If the amplifier is now turned on, additional power will come out of the output (right hand coil) of the amplifier.

Thinking again in terms of dc polarities, remember that when batteries are connected in series, unlike poles are put together. That is, positive goes to negative so that the batteries aid each other and their voltages add.

In *Fig. 4.1,* the voltage developed in the output coil, if hooked up as shown, will add to the voltage on the line because the polarity of the coil is in series connection with the transmitter polarity.

Therefore, the current flow in this entire circuit would increase, because of the added voltage furnished by the amplifier. This would be the equivalent of added extra batteries in the telegraph circuit shown in *Fig. 1.1* in Part 1. It is also the equivalent of negative resistance, because it counteracts the regular resistance of the line.

Note that this is a series circuit. There is a repeater which is built on this principle. However, there is also a repeater, which will be explained later on, which uses an amplifier, the input and output of which are in parallel. Again, comparing this to hooking up batteries, it will be remembered that when batteries are hooked in parallel, the poles must be the same instead of opposite. Therefore, a parallel negative resistance hook-up would look like *Fig. 4.2* with modifications which will be discussed later. Note in this drawing, that the polarities on the amplifier and receiver are the same as that furnished by the transmitter, because all are in parallel. Note, also, that the polarity of the line resistance, compared to the receiver, is opposite, because these two units are in series.

From the above, it should be remembered that if an amplified voltage of opposite polarity is put in series with the voice voltage, increased voice current flow will result. These polarity relations should be thoroughly understood before proceeding.

(To Be Continued)

Transatlantic Cable Run Nears Completion

The British cable-laying ship "Monarch" recently reported off the Scottish coast, was expected to complete the first stage in the laying of the new transatlantic telephone cable by the end of September (TELEPHONY, Sept. 3, p. 35). At that time one complete cable will have been run across the Atlantic from Newfoundland to Scotland.

The laying of a second cable (to form a twin telephone link) will follow, and this work is expected to be completed about the same time next year. Telephone service on the new cable, it is expected, will then begin by Christmas, 1956.

The "Monarch" began at a point 200 miles off the Newfoundland coast, to which a sea cable had already been laid.

Good weather in the Atlantic permitted work to proceed at good speed, much of the cable being dropped to a depth of more than 2 miles. The ocean section of the cable from Newfoundland to the Rockall Bank, 500 miles from Oban, Scotland, was completed in this way.

The "Monarch" is now completing the remaining 500 miles from Rockall Bank to the Scottish Coast. The new cable is the first to cross the Atlantic at its greatest depth. Its ocean section, which lies at great depth, is 1,300 miles long.

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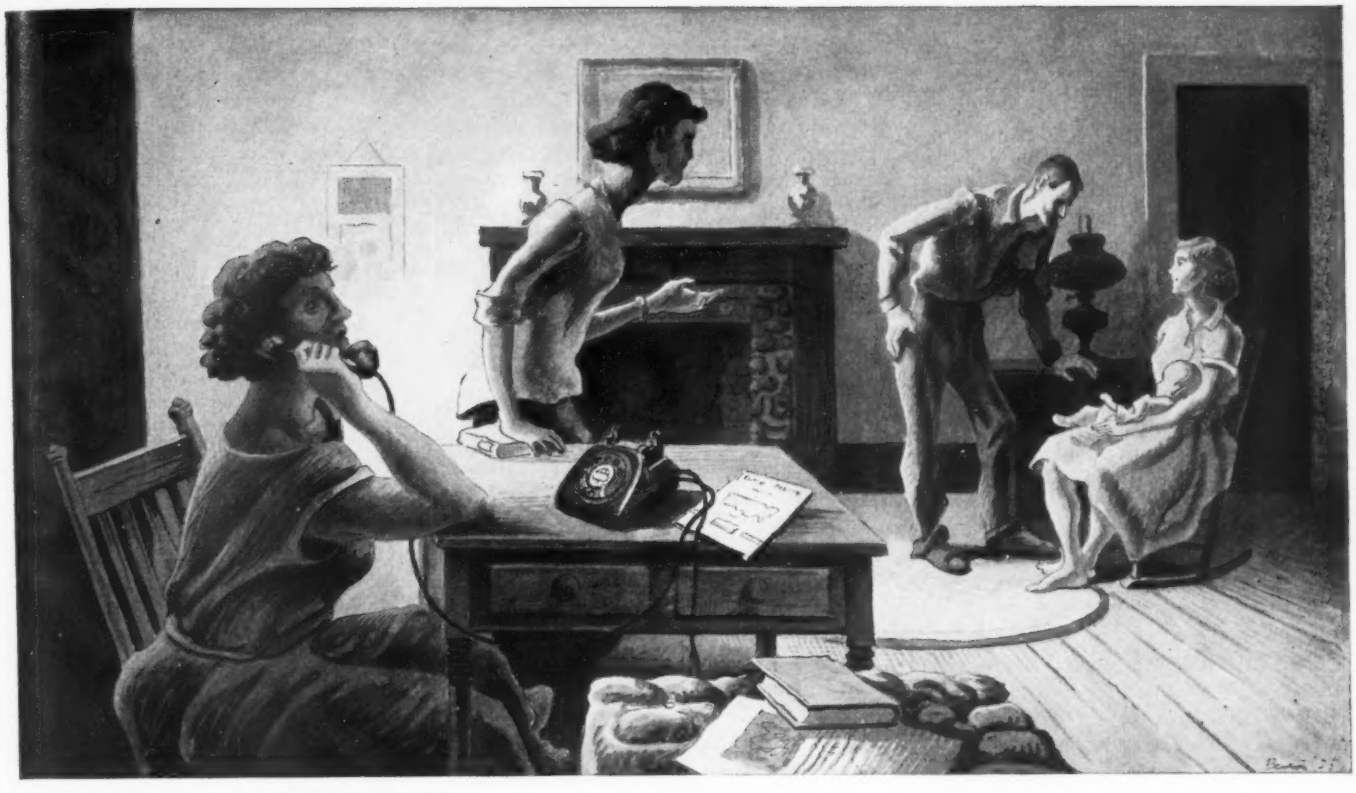

FAMILY COUNCIL

BY Thomas Hart Benton

The telephone brings even far-off members of the family to the council table in voice at least.

Toll calls are an increasingly important source of revenue to telephone companies. Does your directory contain adequate instructions for placing of long-distance calls? Or do your operators spend too much time explaining the procedure to subscribers who use the long lines?

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General Southwest Installs 28 Miles of Buried Cable

General Telephone Co. of the Southwest has begun construction of its longest buried toll cable — a 51-pair cable stretching 28 miles from Port Lavaca to Victoria, Tex.

The buried toll cable project will cost about $250,000 and will provide additional toll circuit outlets for Port Lavaca and the Port Lavaca area. The primary reason the cable is being buried is to eliminate damage from storms.

The Port Lavaca-Victoria area is a highly industrial region on the Texas Gulf Coast. Aluminum Co. of America and the Carbide and Carbon Chemical Co. both have huge plants served from the Port Lavaca exchange which earlier this year was converted by General to automatic operation.

The plowing-in process combines into one operation the digging of the 3-foot trench and the laying of the cable in the trench. The cable will be installed in lengths of 3,000 feet.

When the cable is cut into service in the latter part of October, Port Lavaca will have 12 additional long distance circuits to San Antonio, three additional circuits to Corpus Christi, four additional circuits to Houston, and 11 additional circuits to Victoria. Ultimate capacity of the new cable, through use of electronic equipment, is 250 long distance circuits, which is sufficient for Port Lavaca's estimated growth through 1968. A repeater station for the cable will be constructed in General's Placedo building.

The project will also make it possible for Port Lavaca to join the nationwide long distance dialing network.

REA Borrowers Indicate Lower Construction Costs

Substantial progress has been made in the last two years in bringing down the cost of rural telephone facilities financed by the REA, the U. S. Department of Agriculture announced on Sept. 15.

In a study of unit prices actually bid from July 1, 1953, to June 30, 1955, REA engineers found a decrease of 4.5 per cent in overhead wire construction costs and a drop of 3.9 per cent in the cost of cable construction over the two-year period.

Savings on the purchase and installation of central office equipment were more pronounced, averaging 22 per cent. This ranged from 18 per cent on switchboards of a size not commonly used by rural telephone companies to 30 per cent on the sizes more commonly used, according to the REA.

REA attributed the reductions to more competition among contractors and suppliers, standardization of equipment used in REA-financed systems and a better understanding by contractors of REA procedure and requirements.

As of mid-August, telephone companies and cooperatives using REA loan funds had completed construction of more than 47,000 pole-miles of line and had construction in process on another 20,000 miles of line. One hundred and sixty-eight borrowers already have placed in service 590 new automatic exchanges, and nearly 300 more automatic central offices are in various stages of construction. REA had advanced more than 105 million dollars to telephone borrowers to pay for construction and other costs necessary to begin modern dial service to farm families and other rural subscribers, the REA said.

Elect Management Directors

When the American Management Association met in New York City on Sept. 14, among directors elected were: M. R. Sullivan, president of the Pacific Telephone & Telegraph Co., and Robert C. Tait, president, Stromberg-Carlson Co., a division of General Dynamics Corp.

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June 1955
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Martinsville, Va., Company Elects New Officers

Following the death of the late B. L. Fisher, the board of directors of the Lee Telephone Co., Martinsville, Va., met and elected the following officers: President, Frank G. LaPrade; vice president, L. M. Fisher; secretary-treasurer, Garland T. LaPrade, and directors: Kennon C. Whittle and M. A. Bowman.

Frank G. LaPrade, a native of Rocky Mount, Va., has been associated with

F. G. LaPRADE

the Lee Telephone Co. since June 1, 1929. He moved to Martinsville as local manager on Sept. 1, 1930 when that exchange was taken into the Lee system. Since 1934, he has been general manager, secretary and director of the company. He was a charter member of the Virginia Independent Telephone Association. He was a director of the association for nine years, served as secretary-treasurer for two years and was president in 1943.

He is also a charter member of the North Carolina Independent Telephone Association, serving as director for several years, and is a vice president at the present time.

L. M. Fisher of Callaway, Va., was associated with his brother, B. L. Fisher, in the early days of the company. While he has not been actively engaged in the operation of the telephone company for many years, he has continued as vice president and director.

Garland T. LaPrade has been with the Lee company since 1930, beginning as clerk and rising through the offices as auditor, general commercial manager and company director to his present position as secretary-treasurer and director. He is president of the Virginia Independent Telephone Association, having formerly served as secretary and vice president.

M. A. Bowman joined the company in 1937 as auditor and was elected a director on July 1, to fill the vacancy left by the death of Mrs. B. L. Fisher.

Kennon C. Whittle, a Justice of the Virginia Court of Appeals, is one of the trustees and executors of B. L. Fisher's will. He is a native of Martinsville.

Bell Introduces New Teletypewriter System

A new semi-automatic teletypewriter system, first of its kind, has been placed in service for Consolidated Freightways by the Bell Telephone System.

Heart of the system, which stretches through 12 states, is a relay center located in Portland, Ore., Consolidated Freightways' headquarters. The Portland center serves as an electronic brain which controls the sending and receiving of teletypewriter messages from 65 locations of the motor transport carrier.

The new communications system was developed by the Long Lines Department of American Telephone & Telegraph Co. and by Pacific Telephone & Telegraph Co. to expedite messages dealing with dispatch of Consolidated's vehicles.

Consolidated, largest motor transport carrier in the West, last year moved 2,168,364 individual shipments, weighing 1,005,364 tons, over a total of 59,969,850 inter-city miles. To facilitate movement of such tonnage, the firm has located message and dispatch centers in 12 states.

The states and the number of locations involved are: Oregon 19, Washington 13, Montana 10, Idaho 7, California 6, North Dakota 3, Wisconsin 2, and Minnesota, Illinois, Nevada, Wyoming and Utah one each.

Portland is the hub for the 11 teletypewriter private line circuits which hook these locations together. Chicago, one of the locations, also acts as a relay point between the other 64 and five cities—Dayton, Cincinnati, Louisville, Indianapolis and St. Louis — recently added to the Consolidated system through purchase of the Foster Freight Lines.

To send a message from the Consolidated office in Chicago to Seattle, and several other points in the Northwest, the Chicago attendant prepares a perforated tape in the same manner a message would ordinarily be written on a teletypewriter. The complete tape is placed in the Chicago transmitter. From this point on, the operation is automatic.

At Portland, the message receiving

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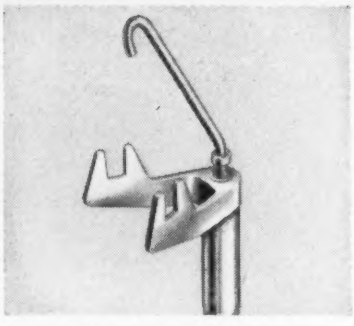

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This Dodge product is used for placing cable blocks on suspension strands. Consists of an aluminum alloy tubular member which fits into head section handle, aluminum alloy cradle for block support, and hook for operating block cam lever. Hook may be set in two positions 180° apart for either right or left hand cable positioning. Wt. ¾ lb.

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IMMEDIATE DELIVERY

equipment is constantly sending out electronic impulses along the 11 circuits to see if there are any messages in transmitters at the outlying stations ready to be relayed.

Finding there is a message ready and waiting at Chicago, this electronic device connects the Chicago transmitter to the circuit and turns it on.

Automatically, then, the message is "pulled" into the Portland center and recorded on a receiving machine. When the transmission is completed, the Portland receiver automatically turns off, disconnects the transmitter in Chicago.

To relay the message to Seattle and other desired points, the Portland message center people take the incoming tape and place it on a transmitter. Then the stations for which the message is destined are selected by pushing buttons on a board above the transmitter. When the circuit, or circuits, needed to relay the message are available, the message is automatically sent on its way.

Advantages of the new communications setup over the former system include:

(1) Personnel at outlying stations simply put a message on their transmitter, then go away and leave it with the knowledge that it will be automatically transmitted. (Under the former system, they had to wait around with a message until the circuit was clear, and then "get on" the circuit before another station did.)

(2) Similarly, personnel in the Portland message center can set up a message for transmission, leave it, and devote their time to another duty.

(3) As a result, more messages can be sent faster with less working time for personnel involved.

TV Telephone Makes Debut In San Francisco

Little short of sensational was the debut of a new gadget called "Videophone," in which Pacific Telephone & Telegraph Co. played an active role at a recent electronics convention in San Francisco.

The instrument, a TV telephone, is a development of Kay Labs of San Diego, whose officials predict it will have widespread commercial application in years to come. It consists of a standard telephone hookup and two screens on which the caller and the person called are visible. The pick-up cameras operate on special circuits and are not connected to the telephone. Reception of both sound and pictures is exceedingly clear.

Pacific Telephone supplied a microwave link between the Fairmont Hotel and the Civic Auditorium over which the new device was demonstrated.

Reactions were enthusiastic, though the natural question came up: "What do you do if you're in the shower?"

The answer was: "Put on a bathrobe!"

San Francisco daily papers gave the story considerable play. The New York *Times* picked it up and wire service stories across the country provoked a flurry of questions.

The most common was: "Is it available now?" Kay Labs replied that it may be made available in the near future to industry.

One suggested use was for plant security. Another was the possibility of using a dozen or more TV telephones, hooked up at strategic locations, for plant inspection purposes. Cost was not discussed in any detail, though the Kay Labs camera unit sells for about $2,500.

San Francisco Mayor Elmer E. Robinson and PT&T Division Commercial Manager Roy Buell were among those interviewed by the press on the gadget.

W. A. Seely Cited for Civic Activity by Colgate

During Founder's Day exercises on Sept. 21 in the Colgate University Chapel, Hamilton, N. Y., William A. Seely, president of Chenango & Unadilla Telephone Corp., Norwich, N. Y., was singularly honored by the university, when he was presented one of Colgate's civic awards for conspicuous community service.

In the citation, recognition was given Mr. Seely for his many services to the city of Norwich as past president of its Chamber of Commerce; its Congregational Church; its Chenango Memorial Hospital; and its Rotary Club. He is cited, also, as having been instrumental in organizing the centralized school system in Chenango County; as having served as chairman of the Commission for the Acquisition of the Water Works; and for serving as a member of the Draft Board.

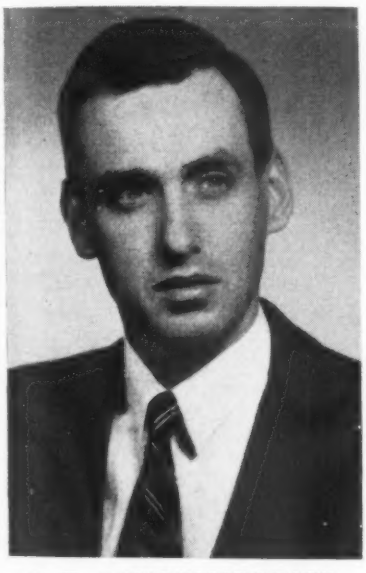
Mr. Seely has served as a member of the New York State Telephone Association board of directors continuously since 1921, being outranked in this capacity by only one other man, Frank D. Fancher, and then by only a few months. He is also a past president of the association.

Obituary

PAUL BENNETT, 75, owner of the Ellerbe (N. C.) Telephone System, died on Sept. 22. He is survived by his wife and four children.

Kellogg Elects Two to Top Management Posts

The election of George T. Scharffenberger as vice president in charge of operations of Kellogg Switchboard & Supply Co., Chicago, division of International Telephone & Telegraph



G. T. SCHARFFENBERGER

Corp., was announced on Sept. 20 by James H. Kellogg, president. At the same time, it was announced that Sterling H. Bass, comptroller, was also elected treasurer.

Prior to his election, Mr. Scharffenberger—who will also serve on the Kellogg management board—was vice president of Federal Telephone & Radio

S. H. BASS

Co., also a division of IT&T. He joined Federal in 1943 as general auditor and a year later was named assistant comptroller. Following service with the U. S. Army, Mr. Scharffenberger returned to Federal to become comptroller in 1947. He was elected vice president in 1953.

Before joining the system, Mr. Scharffenberger was with the accounting firm of Arthur Andersen & Co., New York. He is a native of New York, a graduate of Columbia University and a certified public accountant of the state of New York.

Mr. Bass, who joined Kellogg as comptroller and assistant treasurer in 1952, had previously been a partner in the accounting firm of George Rossetter & Co. in Chicago.

Line Material Flood Victims Receive $50,000 Relief Fund

A fund, exceeding $50,000, was donated by Line Material Co. and its employes for L-M employes who suffered losses in the recent eastern flood.

Thirty-three employes of the firm's East Stroudsburg, Pa., plant sustained considerable loss of property besides enduring physical hardships and suffering. More than 20 of them found their possessions destroyed or swept away by the rampaging waters. At least 10 had their homes destroyed. Three employes reported that members of their families were killed.

Even before the flood waters began to recede, many requests reached the Milwaukee main office from employes of the firm's 10 plants and 42 sales offices, asking how they could offer assistance. An East Stroudsburg flood relief fund was organized within L-M and the company offered to match the employes' contributions, dollar for dollar.

The L-M plant at East Stroudsburg is located on high ground and completely escaped flood damage. However, shipments to and from the plant were totally disrupted for about four days.

American Appraisal Adds J. P. McKean to Staff

James P. McKean has joined the organization of The American Appraisal Co. and will make his headquarters in Milwaukee.

Prior to forming his new connection he was professor in the general Engineering department and in the graduate school of Iowa State College where much of his time was devoted to the theory and practice of valuation. His background includes practical experience in valuation of public utility and industrial properties.

Mr. McKean holds a commission as lieutenant-colonel in the reserve of the U. S. Army Corps of Engineers. He is a registered professional engineer in the state of Iowa. In addition to the B.S., M.S., and professional engineering degrees, he holds a degree of LL.B. and was admitted to the Bar in the state of Iowa.

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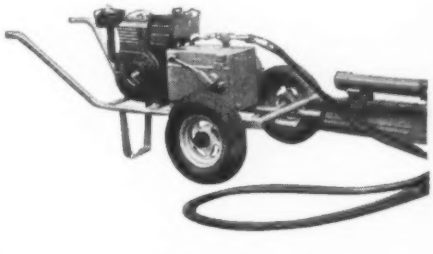

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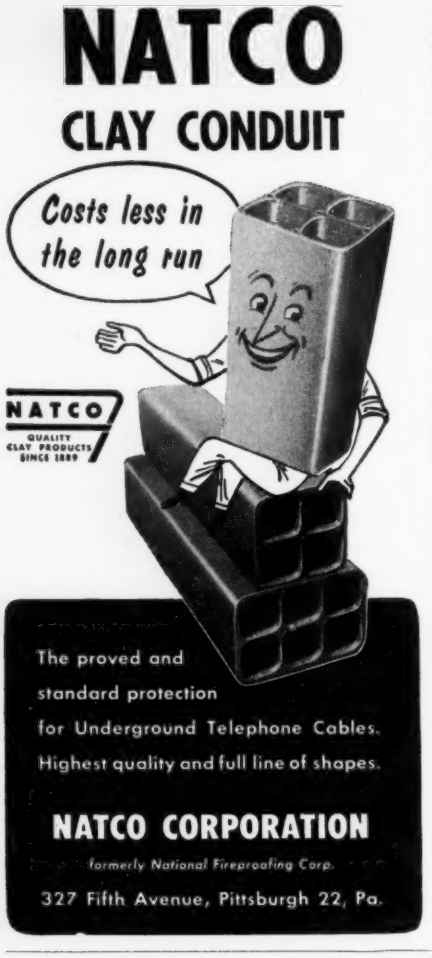
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J. M. Darbaker Elected Head Of Copperweld Steel Co.

The board of directors of Copperweld Steel Co. announces the election of James M. Darbaker as president, succeeding Frank R. S. Kaplan who was elected chairman of the board of directors. Henry G. Riter III, president of Thomas A. Edison, Inc., and president of the National Association of Manufacturers, was elected honorary chairman of the board of directors and chairman of the finance committee.

J. M. DARBAKER

Mr. Darbaker had been senior vice president of Copperweld since May, 1954, after having served as director of distribution and availability of United States Steel Corp. Prior to that, Mr. Darbaker had been associated for many years with operating subsidiaries of United States Steel Corp., and had served as general manager of sales for Carnegie-Illinois Steel Corp., as well as manager of operations of the Chicago District for that subsidiary.

Copperweld Steel recently announced a 12-million-dollar modernization and expansion program for its major facilities, to be completed by the end of 1957.

Preformed Names Lekson To Head Telephone Sales

P. M. Schloss, general sales manager of Preformed Line Products Co., Cleveland, O., announces the advancement of Max A. Lekson to supervise field sales activities in the telephone and railroad fields.

Mr. Lekson joined Preformed early in 1954, and has been serving in the sales department as office manager and in a sales service capacity. His previous experience includes five years service with the wire and cable division of U. S. Rubber Co. He also served as a pilot in the U. S. Army Air Corps prior to his graduation from John Carroll University, Cleveland, O.

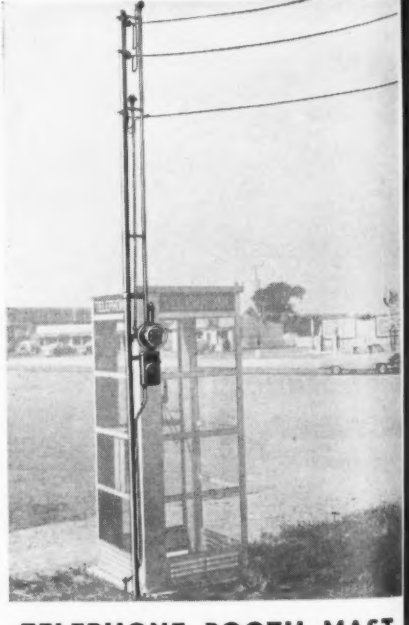
Preformed offers many products for the telephone industry. Included are telephone splints and splint & ties, dead-ends for self-supporting telephone cable, dead-ends for telephone line wires and messenger, line guards, splices, armor rods, lashing rods, guy-guards and others.

Consumers' Opportunity

"Our people in their capacity as consumers have the opportunity to improve their high standard of living. Consumers' over-all demands, bolstered by the sustained high volume of business investment, will offer opportunities for expansion and profit to producers and merchandisers alert to the potentials our vast market affords."—SINCLAIR WEEKS, *Secretary of Commerce.*

Responsibility

"The battle against the appalling waste and inefficiency disclosed in the Hoover Commission reports will be won through the leadership of such groups as businessmen." — HOMER FERGUSON, *Former U. S. Senator from Michigan*



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